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GLEANINGS IN BEE CULTURE

A JOURNAL DEVOTED
TO BEES,
AND HONEY,
AND HOME
INTERESTS.

ILLUSTRATED
SEMI-MONTHLY

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FOR CHAPPED HANDS or rough face, one part borax, two parts honey, eight parts glycerine, and a few drops of orange-flower water. —*Union Apicole.*

UNDER no consideration use basswood in brood-frames. Use pine, as that will not warp and twist and crawl out of the hive. [You are right, I think. —ED.]

THE STATEMENT is going the rounds in foreign journals that a monument costing \$3000 has been put up in memory of Langstroth. That gives American bee-keepers undue credit. It should be \$300.

DEACON HARDCRABBLE, in the *American Bee-keeper*, quotes Mrs. Rorer as saying, "Honey is an admirable sweet if taken once in a while with moderation." Instead of taking his with moderation, the deacon prefers to take it with bread and milk.

THE ASSERTION that, when the bees of a colony with laying workers are shaken off the combs at some distance from the hive, the laying workers will not find their way back, Editor Kellen, of the *Luxemb. Bienenzeitung*, says is simple humbug. I guess he's about right.

IN HUNGARY, says the *Leipziger Bienenzeitung*, where tobacco is largely cultivated, at Nagy-Iesca, bees work busily on the blossoms, but thousands of dead bees are found on the leaves, and colonies are greatly weakened. Why don't they offer the bees a smoker to let the nasty stuff alone?

IT IS SAID there is a vast amount of ignorance about "scientific queen-rearing." That hits me. I don't know much about it, and I should like to. If the good brethren who know all about it would take up less space scolding and more in giving information I should have a better chance to learn. ["Scientific queen-rearing"—is that not somewhat of a misnomer? All queen-rearing has to do with science. The word "scientific" in this

connection I suspect more often means "modern" or "up to date." —ED.]

THE RULE that a bee works on only one kind of flower on the same trip is not without exception. I have seen a bee vibrate from one kind of flower to another half a dozen times in half as many minutes, and I've seen a bee busily working on white clover with orange pollen on its legs. [I have seen bees in California work from one species to an entirely different species of flower. If bees work on one flower I suspect that it is because almost nothing else is in bloom. —ED.]

COMPARING the bee with ourselves, we are likely to think of the thorax as containing a considerable portion of the digestive system. Nothing of the kind. All of the digestive system found in the thorax is the oesophagus, or gullet, a narrow tube that runs straight through the thorax to find the honey-sac in the abdomen. Then comes the chyle-stomach, or true stomach, and the small and the large intestine. But the length of intestine is very small compared with that of the human system.

YES, that cover described on page 522 may be just what is wanted. The dead-air space is all right, and it is absolutely essential that the grain of the two thicknesses run in *opposite directions*. That secured, and the cleats so made that they will not project below the surface, and I see no reason why you have not a cover for all climates. [I find that there is a tendency to use a double cover here on the Pacific coast. Rambler has just shown me one of his, and it is like our cover. It must be a good one. —ED.]

THAT SUGGESTION of E. H. Schaeffle is worth thinking about. It seems pretty well agreed that honey extracted from black brood-combs is not quite as light as that from new comb, and any one may have noticed that when water stands for some time in old brood-combs, and is then shaken out, it will be quite black. But I think Mr. Schaeffle is the first to put the two facts together and suggest washing out the combs. Lay the combs flat, fill the cells with water from the rose of a watering-can, then after soaking throw the water out with an extractor.

HERR KRAMER, in *Deutsche Bienenzucht*, speaks of certain American breeders who maintain that it is a matter of indifference whether eggs or young or old larvae are used for queen-rearing. There must be some mistake about that. I think no American breeder uses larvae more than three days old, and it is doubtful that a three-day-old larva is as good as one younger, seeing that queenless bees, when given their choice, prefer the younger. [Herr Kramer has misread or mistranslated your article on the subject. It is to be regretted that we do not all have one universal language.—ED.]

COMPLAINT is made by some that, when no queen-excluder is used, the queen goes up and lays in the sections. The curious part is that A says he has no trouble at all, while B has brood in a fourth of his sections. Possibly this explains it: There is no drone comb in the brood-chamber in either case. B's bees have only starters in the sections, and they will build drone comb there, and the queen will come up to lay where the drone comb is. A's sections are filled with worker foundation, and there will be no drone comb there to bait the queen up. [In California, so far as I have gone, perforated zinc seems to be generally used, even for comb honey.—ED.]

RASPBERRY-BLOSSOMS have interested me much. Acres of raspberries are on my place, and Langstroth's mention of the "drooping blossoms that protect the honey from moisture" may be all right for the wild plants with canes 6 to 10 feet long, but here the blossoms are upright. Work begins on these blossoms in the early morning, and I've seen bees on them at 7:40 on a rather cloudy evening. At first I thought no pollen was gathered from raspberry; but patient looking showed one bee among a great many with a small load, and by looking closely in the morning, with glasses, I found nearly every bee had a very small load. This makes me think it must be a mistake that a bee does not gather nectar and pollen on the same trip.

ELIAS FOX raises the question whether drones from laying workers and drone-laying queens are virile. I think it would be hard to prove that drones from laying workers are not all right, but I should not want them. But I should have no fear about drones from a well-developed queen, whether fecundated or not. What change can fecundation possibly make upon eggs that are in no case fertilized? Are not the drones of a played-out queen just the same after the contents of her spermatheca have become exhausted as before? And why should they not be the same before the fecundation of the queen? Of course, that is not positive proof. There was a case in Australia—possibly others in this country—in which positive proof was claimed: a queen properly fecundated at a time when it was known there could be no other drones except those from a drone-laying queen. [If we can make the matter of fertilizing queens in confinement a success we might prove or disprove the virility of drones from laying workers.—ED.]



Jupiter Pluvius reigns this spring,
And gives the rain loose rein;
It comes in cloudburst, shower, and storm,
On city, field, and plain.



BEE-KEEPERS' REVIEW.

H. D. Burrill has a good article on the prevention of swarming. He says, "A good deal may be done to discourage swarming by giving plenty of surplus room, and ample ventilation and shade. Have no queens over two years old in honey colonies."



In my opinion, this (June) is the best issue Mr. Hutchinson ever got out. He either sits up nights to do such fine work or else he studies on his plans after retiring. The frontispiece shows the main street in Flint. It is spanned by several iron arches, each supporting 50 incandescent lights, and these alone add greatly to the beauty of the street, which stretches away into illimitable perspective in the distance; and, what a place for wheeling! the astonishing statement is made that more vehicles are made in Flint than in any other place in the world except Cincinnati, and it is likely that it will soon stand at the head. About 800 houses will be built there this year. They have a thousand-dollar marble drinking-fountain for people, supplied from an artesian well 600 feet deep, all built by private subscription. It seems that what they want they get and pay for it.



The star article is written by F. B. Simpson, on in-breeding. As stated in Mr. Hutchinson's advertisement in this journal, p. 492, Mr. Simpson may well be regarded as an authority on this subject. "If practiced it should be sparingly and with good judgment" is the tenor of the whole article, occupying four and a half pages, every line of which is readable. After speaking of the advantages that have resulted by in-breeding in case of some plants and cattle he says:

Until we can get some absolute proof that these arguments are untrue in the specific case of bee-breeding, it would seem unsafe for any queen-bee breeder to do any in-breeding with the intention of selling the resulting stock; but only as a matter of research until some absolute proof could be obtained by experimental work through several generations of bees. Few queen-bee breeders will consider that they can afford to do even this amount of experimenting in view of the fact that out-crossing has none of the objectionable features in the public mind that in-breeding possesses. One of the bottom facts of in-breeding is, that *nature* never does it unless compelled to.

Concerning bees with long tongues, Mr. Simpson says:

Other things being equal, I want long tongues; but if I were raising my ideal of a bee for sale, the "long-tongue" part of my advertisement would be in smaller type, while with great "scare heads" I would proclaim "Superior Suckers." Above all, I want a bee that can suck and carry as large a load as possible, or else make it up in increased number of loads. To my mind, the long-tongue agitation is too much like treating a symptom, instead of the disease itself. . . .

Whenever a colony of long-tongued bees is superior to a colony of bees with shorter tongues, as shown by the gathering of nectar from red clover, such superiority is due to increased vigor, which (other things being equal) shows that the greater length of tongue is due to increased use of and energy in the use of that member, usually through several generations, it being apparent that it takes more energy to use a long tongue than a shorter one. It naturally follows that in a locality, or at a time when red clover fails to yield nectar, this increased energy of the long-tongued colony will not go to waste, but will be used to advantage in the more rapid storing of more easily reached nectar, regardless of its source.

The last sentence will stand another reading.

Concerning the value of bee-papers to bee-keepers, Rambler makes the following forcible suggestion:

I am acquainted with a bee-keeper who owns 600 colonies of bees. I broached the subject of bee-papers, and he said he had not taken a bee-paper for several years; he didn't see that a paper did him a bit of benefit. "Here, I have my bees," said he. "The bees suit me, the hives are right, I know how to extract, and what more can I know about the business that would be of benefit?"

All very well so far. A few months after, I was in one of his apiaries with him and he made a great complaint about getting queen-cells accepted. "Why," said he, "they tear down almost every one I insert; do you have such trouble?" "Unless I cage the cell," I then showed him how to make a very simple cell-cage by taking a piece of wire cloth about three inches square and working a lead-pencil through the center, leaving it cone-shaped. Now, he might have learned that simple thing a dozen years ago from a bee-paper just as I did; but he had to wait to get it second-hand, and away past date. All the same, it came through reading the bee-papers. And there you are, Mr. Editor. If you arouse that class of bee-men you have a big job on your hands.

A "big job" truly; for all experience shows that men have been as averse to the things that help them as to those that injure. All great inventions have had to plow their way through icebergs of prejudice, especially the steam-engine and telegraph.

BRITISH BEE JOURNAL.

A writer has the following to say in regard to sparrows:

My apiary is situated in the garden, and I noticed after the young sparrows had flown from the nest that they, along with the old ones, spent a good deal of time near the bee-hives. After watching them for some time I noticed the old sparrows perched on top of the hives, and now and again making a dart caught any bee that came near; indeed, they sometimes alighted on the ground in front of the entrance and picked up any poor bee that had fallen down too heavy-laden to reach the alighting-board, and carried them off to where the young sparrows were waiting, and in the midst of great rejoicing devoured them. I will leave you to guess what were the feelings I had to see my workmen so ruthlessly destroyed, and sparrows are now, and ever will be, classed by me among the worst enemies of bees. I regard them as far worse than tom-tits.

These birds should doubtless be destroyed wherever found, just as rats and mice are.

AMERICAN BEE JOURNAL.

In speaking of our national affairs, Prof. Cook says, in his Home Circle:

The entire world looks enviously at our commercial progress. They watch our rapid and increased thrift. They watch our continued and rapidly increasing prosperity with almost consternation. That should make us no less energetic or frugal. It should make them hasten to study our methods, and to adopt our practice.



BOTTLING HONEY.

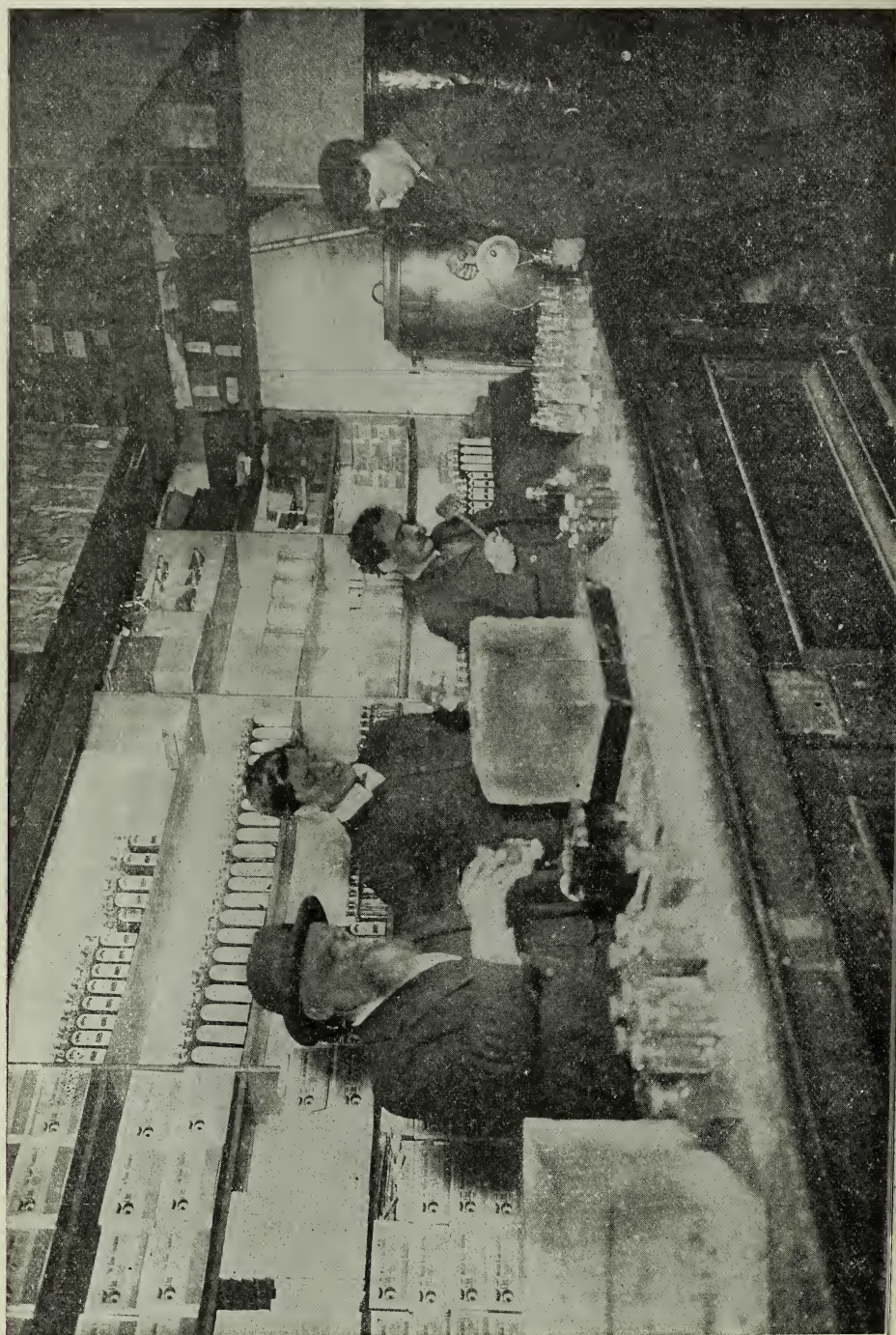
How it is Kept in the Liquid Form; a Few of the Secrets of the Trade Explained; How to Construct Special Apparatus for a Large Bottling Business.

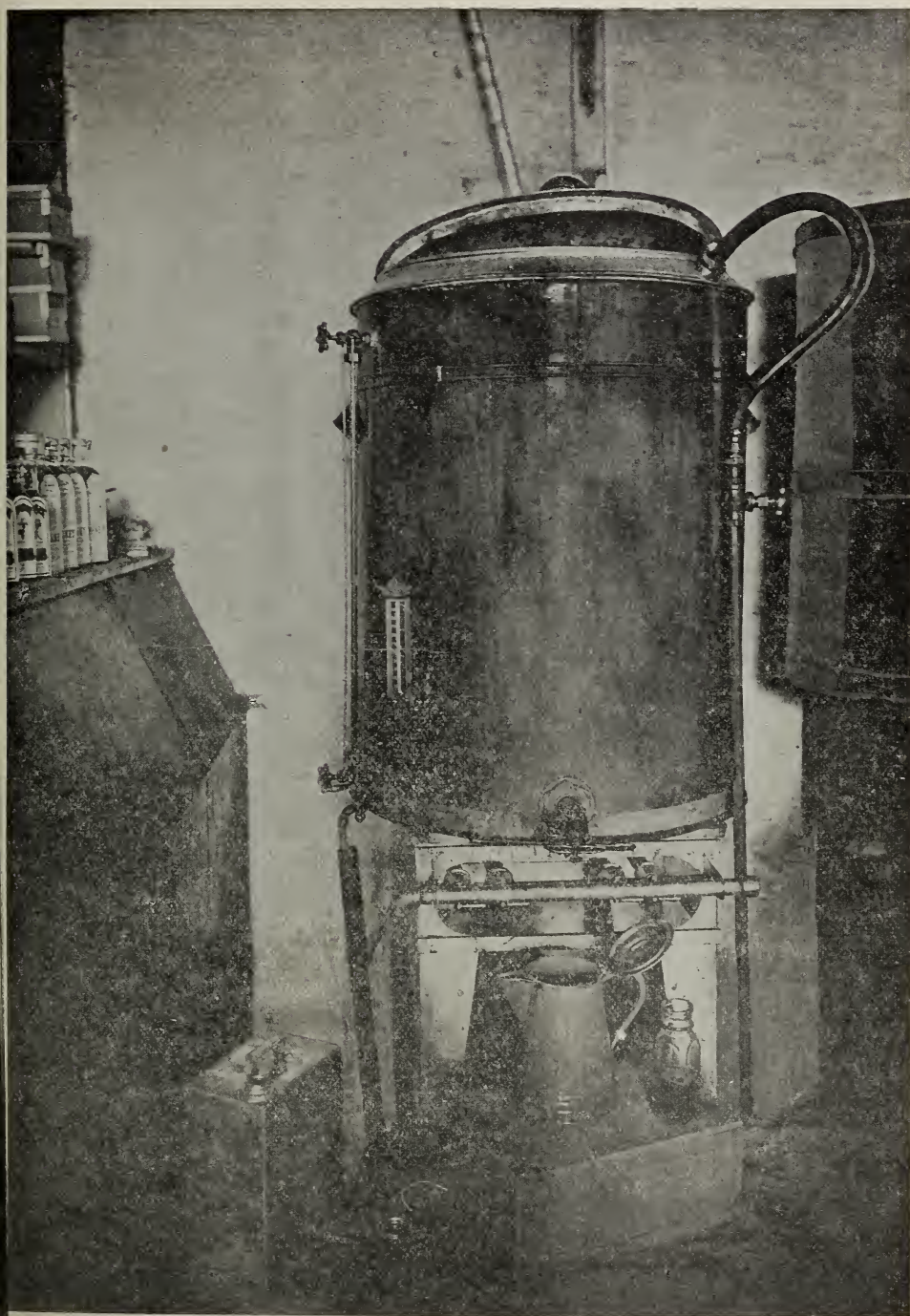
BY J. R. SCHMIDT.

The bottling of extracted honey for the wholesale and retail trade to supply a market which calls for and wants only extracted honey must necessarily be undertaken on a large scale, and one somewhat larger than most bee-keepers have been accustomed to battle with. Cincinnati, as many know, is a market for extracted honey from the small ten-cent bottle to the 500-lb. barrel shipped in by the carload, and bought by the manufacturer who uses a large quantity of the darker and inferior grades. Then comes the grocery trade, each store with its large or small display of various-sized bottles containing extracted honey of the best looks and the best flavor—the very cream of the bee-keeper's labor. This trade, although not as large as the manufacturer's, is nevertheless a very important and delicate one; for, if the honey is granulated, it is looked upon with suspicion. A shelf containing bottles filled with liquid honey, and one just below it with granulated honey of the same quality, the latter will stand untouched while the former is often sold twice over.

This state of affairs has set Mr. C. H. W. Weber, our Cincinnati honey-merchant, to thinking; for, to be continually replacing honey which granulates so quickly during cold weather, was a task almost impossible, and not at all profitable. Mr. W. follows a plan of putting up honey which he calls the new way of liquefying and bottling honey; and this plan is not only a success so far, after the most severe tests, but also allows the work to be done rapidly and to the very degree of perfection. Through the kindness of Mr. W., who explained every thing in detail, and allowed me to take several photographs, I will try to impart some of this interesting knowledge to the bee-keepers.

This new (?) method is to some extent based on the same principle which our mothers and grandmothers have been practicing for years, and is now still in use, and probably will be through the present century and may be the next one. We all know how much care is taken at home, during preserving time, to have all the jars and cans containing the fruit to be preserved for future use very hot just before they are sealed air-tight. Fruit put up this way in their rich syrup will keep for years, and the syrup will never show the slightest trace of granulation. Now, why can't this method preserve honey in the liquid form? Well, it can do it in this case just as well as in the first. This is Mr. W.'s foundation upon which he bottles honey; and as most of the





WEBER'S HONEY-MELTING TANK FOR BOTTLING PURPOSES.

honey which comes to him is in the granulated form, this method must be worked on the wholesale plan; for, instead of working with quarts or gallons, we must now consider barrels at a time.

For this purpose a large tank was constructed (see photo) which will easily hold one barrel of granulated honey at a time. This tank is an ingenious affair, and is really two tanks in one. The inside, or honey-chamber, is surrounded by an outer tank made of copper, with a three-inch space between the two for the water. This surrounding water is heated by a gas-stove of special design which also acts as a support for the tank. The height of the water within the tank is registered on the outside (at the left) at all times, and this amount can be increased by turning on the water connection which is shown on the right-hand side. Should the water supply become too great, a turn or two on the small wheel at the bottom of the tank on the left-hand side allows the water to escape into a drain, and it is carried away without further attention.

This brief description, together with a study of the photograph, will give some idea as to how the honey is liquefied.

When the honey has been reconverted into the liquid state, and the register on the tank shows that the proper temperature has been reached (180°), or has been so for at least five or ten minutes, one of the assistants at work allows a quantity of the hot honey to run into the large coffee-pot, which is found to be an excellent article in this work on account of the large lip which makes pouring without spilling an easy thing. Then he immediately proceeds to fill the empty bottles waiting for him at the end of the counter (see photo). The next man, supplied with corks and a mallet, takes the bottles as fast as they are filled, and hammers a cork into each. This method of inserting corks seems rather strange; for, to see him rain heavy blows upon the mouth of each bottle, makes one believe he possesses a wonderful amount of skill to hit the cork every time and keep the bottle from flying to pieces; but upon investigation the whole secret is found to be in the mallet, which is made of solid *rubber*; and any amount of hammering on the bottle would not break it. This mallet does its work well, for it puts the cork in squarely and rapidly, and has never been known to break a bottle. From his hands the corked bottle passes on to Mr. W., who dips the same into a melted preparation of rosin and beeswax, which gives the bottle a perfectly air-tight seal, and also a nice yellow cap, which is in perfect harmony with the light-yellow honey within the bottle; and last, but not least, this cap is cheap.

The bottle next passes to the cooler, who takes the same and arranges the bottles near the large block of ice in order that the caps will harden quickly, thereby preventing air-bubbles from working through the cap, which would leave a weak place in the same, and finally allow air to enter; and the ice also prevents the bottles from accumulating in an unfinished condition on the operating-table.

This part of the operation is not yet perfect-

ed, as Mr. W. intends to have a track built, upon which a small carriage travels, constructed so as to hold about one dozen bottles in an inverted condition, and this carriage is to carry and hold the bottles over a tray of crushed ice. After the caps on the bottles are hardened they are placed on shelves, and afterward properly labeled, and then are ready for the trade, with the guarantee that the contents is strictly pure, and with the assurance that no granulation will take place in the future.

The rapidity with which this work is done is really astonishing. The three experienced helpers can easily bottle one barrel of honey in three hours, or 1200 bottles. The success of this method of bottling honey may be readily seen from the fact that some honey put up and sealed last summer had been kept on ice since bottling, and, after passing through the present winter, is just as clear as it was the day it was put up, and not a case of granulated honey had to be replaced this winter. The whole operation of reliequifying and bottling honey is done right in Mr. W.'s large roomy store, where customers and visitors are always welcome to witness the operation from beginning to end. This, many take advantage of; and when they see a barrel of granulated honey transferred to the large tank (part of which may be seen at the further end of operating-table), and then extracted from the same in the form of thick golden liquid, and, after following it through the various operations until the sealed bottle stands at the end of the table ready to receive the label, little doubt remains in their mind as to the purity of the article, and many leave with the old proverb, that "all pure honey granulates," badly exploded, for they have just learned that "all pure honey will not granulate," which may now be called the twentieth-century revision of what has heretofore been pumped into the ears of the public, and supposed to be a true test for pure honey.

Now, instead of trying to teach people to accept something they don't want, why not spend less time, do less talking, and make more money, by giving them what they *do* want? for, "a man convinced against his will is of the same opinion still;" and if he asks for extracted honey, and you talk him into buying a bottle or a barrel of granulated honey, nine times out of ten he will hesitate the next time, and generally go where he knows he can get what he asks for.

A tank like the one described costs about \$100; but this price depends a great deal on the pocket-book; for \$100 includes a tank made of the very best material, the "made-to-order" gas-stove, and the cost of having the separate hydraulic connection made. In fact, this price could be reduced nearly half, and still would do the same work, but, of course, not so rapidly or conveniently. Probably in a few years, when the good points are known, a tank will be placed on the market for less than half the price, for it may become almost as great a necessity, if not as great, as the wax or honey extractor is to many beekeepers to-day.

Cincinnati, Ohio.

[This is the last of a series of articles on the subject of bottling honey. We believe we have now covered every detail of the *modus operandi* of some of the largest bottlers of extracted honey. Mr. Weber is in the very field so successfully filled by Mr. C. F. Muth. In consequence of the educational work done by him years ago, there seems to be in the Cincinnati market a strong demand for bottled honey, and Mr. Weber is now taking advantage of the situation.]

This we consider one of the best articles of the series, and those who contemplate embarking in the business will do well to lay this journal aside.—ED.]

NOTES OF TRAVEL.

A Visit with J. M. Jenkins : among the Black People of the Cotton Belt; the Bloody Shirt, etc.

BY E. R. ROOT.

J. M. Jenkins, of Wetumpka, Ala., quite to my surprise, met me at Montgomery, from which point I expected to take another train to his home. After we had exchanged greetings he asked whether I would prefer to wait and go by train or drive across the country through the cotton-plantations with his pony. I chose the latter; but before leaving we took a stroll through the city. We visited the State capitol, in which was held the constitutional convention to consider the question of granting to or withholding the right of franchise from the illiterates of the State. We stood on the very spot, on the stone steps marked by a star, where Jefferson Davis stood when he took the oath of office of the Confederacy; saw the house which he occupied with his cabinet; took several snap shots, and then started on our drive overland through the cotton-plantations occupied and worked by the black people. This ride was to me one of rare interest. As we passed field after field and cabin after cabin with its inmates out in front, I fairly rained the questions upon friend Jenkins. I presume—yes, I know—that I asked many a silly question in regular Yankee style, for I was anxious to know and understand the problem of the colored race from a truly Southern standpoint; for I was sure that we of the North, with our prejudices, did not have all of right on our side. While I can not go into the matter fully here I'll give a few incidents:

After we had gone about a mile out of the city Mr. Jenkins stopped his horse in front of an old colored woman hobbling on crutches. As he did so he said, "Howdy, Aunt Carrie? Stop a minute; we want to talk to you."

She seemed neither surprised nor pleased.

"How old are you?" said Mr. Jenkins.

"Dunno, boss."

"What do you do for a living?"

"Nufun. Gits what I can find."

"How long have you been here?"

"Since 'mancipation."

"When was that?"

"Dunno."

With this Mr. Jenkins handed her a dime,

which she received with the same blank look, without a show of surprise, pleasure, or thanks.

As we drove on Mr. Jenkins explained that a large majority of the "old timers" among the colored people knew no more of their history than this old black woman. The younger generation, having the advantage of schools, are much better off; but in the matter of thanks for favors received, he said they are on about a level with their parents.

Mr. Jenkins, in this connection, told how, one winter, when it was quite cold, he sent around a load of wood to each of his colored tenants free. When the wood was all gone, with one exception they would come back and talk after this fashion:

"Say, boss, that wood you sent is all gone. When you gwine to send some mo?" And this came from able-bodied men who had the privilege of going to his woods and cutting for themselves as much as they liked.

We passed by many and many a cabin where the "man of the house" was loafing, lazing away in a listless sort of fashion in the shade during the best part of the day, when he should have been at work. The cotton-plants, full of weeds, were just at that time needing attention. I fairly ached to spank some sort of ambition into them. Not all the colored men that I watched were thus indolent, but it seemed to me over half that I saw in that stretch of 14 miles were, and those that did work did so in a lazy way.

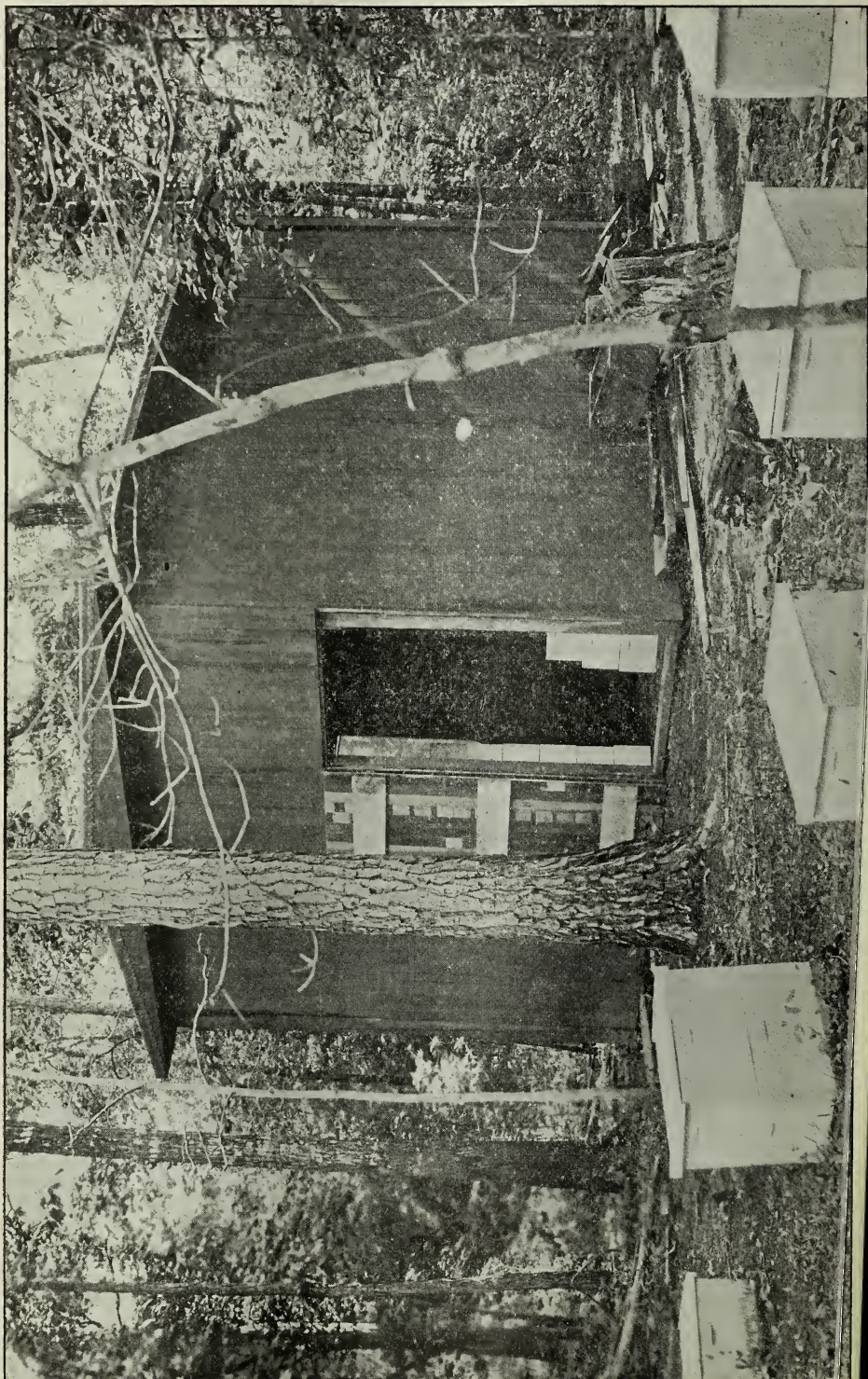
I saw on many of the plantations trees that were girdled, dead, and standing up like great black shafts.

"Why don't they cut the trees down in the first place, and then dig up the stumps?"

"Because," said Mr. Jenkins, with a smile, "the other way is easier."

About this time we got into the vicinity of one of Mr. Jenkins' out-apiaries; and, as we neared the yard, we could hear the roar of the black bees overhead, busily at work, and in delightful contrast to the way the other blacks worked, and which I have just been describing. Presently we came up to the apiary located in the midst of a thick woods, and bearing the name of Hallonquist yard. It contains 100 colonies run for extracted honey. The hives are well made, neatly painted, and well laid out. The annexed engraving gives a partial view of the yard. The building shown in the foreground is the extracting-house; and the novel part of it is that it is made up of panels so that the house can be taken down at any time, and its panels loaded on to a wagon whenever it becomes necessary to move the yard to some other location. The panels are so neatly joined together that a careful scrutiny of the engraving will scarcely show where the one begins and the other ends.

The bees seemed to be working well, but apparently did not like to have me point my camera in a threatening manner. While I was engaged in picture-taking Mr. Jenkins had found a big snake. I suggested that he put it in front of a hive and see what the bees would do with it. I was not sure but that the act would be one of cruelty to animals; but I eased my conscience by thinking that it was



"in the interest of science." Whatever friend Jenkins thought of it, he immediately put my suggestion into effect, and, presto! how infuriated those bees became! Instead of attacking his snakeship they literally poured out (punched) their vials of wrath on our faces. For my cruel suggestion I received no less than five stings around one eye, and broke my glasses in the bargain. By the way Mr. Jenkins was performing, slapping his face and neck, I concluded he was being served in like manner; but, nothing daunted, he kept on "steering" the afore-said snake with a stick, toward the entrances. Those bees would rush out and make for us. A closer scrutiny (when the bees would give us a chance to see) showed that the skin of the snake was so tough that stings had no effect on it. However, the reptile had no desire to crawl into an entrance. When we found we couldn't get the bees to kill it, Mr. Jenkins dispatched it in the good old-fashioned way, with a stick.

CONSTRUCTION OF HIVE-COVERS AND BOTTOM-BOARDS.

Peculiar Conditions in Cuba.

BY W. W. SOMERFORD.

As time glides along, progress is constantly bubbling up and out to the readers of GLEANINGS, especially through Trade Notes. As "simplicity," cheapness, and durability are essentials to success, I will offer a few observations for Trade Notes.

Covers have often been under discussion. I saw in one of Dr. Miller's Straws that, so long as his "covers came from Medina," even when new, they would continue to be "stuffed with rags." I was surprised to see such a slam from the doctor on the Root hive-covers, as I have read GLEANINGS for more than fifteen years, and distinctly remember that Dr. M. figured very prominently in "the Medina delegation" when it met to discuss and devise a *perfect hive*—a hive without a blemish from top to bottom. The Root Dovetailed hive, with flat cover, was the decision of the Medina commission. I have used said hive since its birth, and am *sure it is perfect*, and especially the flat-cover feature. I have had those same flat reversible covers in use since their birth, and have yet to see the first robber bee go under them. But deliver me from such trash as the Excelsior cover. I had a shipment of them last October. They are now spreading their wings as though to fly, and summer hasn't come yet either. Still it would take a bagful of rags to make them all bee-tight, even to-day. "Unless otherwise specified, this cover will be furnished with *all* our hive combinations." Deliver us!

As the good old Medina flat reversible cover has come for ever to stay, I will discuss it just a bit.

It is easier than the easiest to put together, and will last longer than the longest, because necessarily made of the best material. It will ventilate better than the best by lifting and pulling back just one inch, so as to catch the end cleat on the front of the hive. It will

keep warmer than the warmest by using a top cloth under it. In fact, it is simple perfection. In making you have only three pieces to nail together. In making the Excelsior cover you have six pieces to nail together.

Now comes the question for the poor "bug-man." I say "poor," for I've never known one any other way. The price? That is the question that caused me to write this letter. It is, of course, high, as such lumber runs "in the fifties," and lumber at \$50.00 per 1000 makes dear covers, although good ones.

Now, to cut the price I began experimenting ten years ago with thickness. I tried $\frac{1}{2}$ inch in thickness; found it to be too thin; then I tried $\frac{3}{4}$, and have used them for years. I have just completed 500 of them, and can assure any one that a cover $\frac{3}{4}$ thick is nicer, lighter, and cheaper, by a lot, than the old inch-thick cover adopted years ago. The thinner ones warp with less force. It will last a lifetime, if painted, and never need rags if occasionally reversed. In fact, they are for me a happy solution of the vexed cover question. Now for bottom-boards.

The bottom-board question has troubled me more than the cover question; but I have solved it too, at last. The fact is, I belong to the 90 per cent or more who set bees on the ground, or very close to it, for many good reasons. I find that, the closer to the ground, the better. Why? They are warmer in winter and cooler in summer when standing flat on the dirt. These are facts; and no queens ever get under the bottom-boards and get lost—a big thing here in Cuba, where hives are so often opened to empty them.

A friend of mine, with a 300-hive apiary, said he had the real hive-stand, two railroad irons on the ground, side by side, and 15 inches apart (cost him a lot, though, and had to throw them away very soon, as, in going over with the first extracting after getting over, he found 37 queens out of 300 *black ones* between the rails under the hives, with bees and combs started). The best bottom-boards must have the $\frac{3}{4}$ bee-space, in order to handle big colonies in a hurry, as, with the $\frac{3}{4}$ space, bees don't pile up and clog under the frames when rammed in in a hurry—a very important item. The way I solved the bottom-board question, I began using the $\frac{3}{4}$ side of the Danzenbaker bottom-board—set them flat on the ground, and soon learned that Don Carlos, one of our big tough Cuban grasses, would find the joints in the bottoms, and crawl right up through them, ramming the tight joints out to bee-entrances—a bad thing, too—many of them in the same bottom-board. So I scratched my head, knowing there was not a hive-factory in the world that could make of wood a bottom-board to rest on the ground and keep Don Carlos out, to say nothing of decay and wood-eating bugs that are so numerous down here. As I said, I scratched my head, got on my wheel, and started off with a Spanish-talking American bee-keeper, to a tile-brick factory. We soon found the jolly owner, and told him just what we wanted—smooth and straight flat-pressed brick, 16 inches wide by 21 long. He smiled, and said

he had just the "American machine" to make them with, and made them. And, gentlemen, I can tell you now, as I place them on nice flat ridges of earth, it is with a feeling that I shall be grown old and gray before the meanest one begins to even show decay. The man who made them said they would last for ever. Just think of a nice bottom-board lasting for ever, and costing only ten cents! If you have no tile-factory to apply to, concrete or cement will make them—are cooler than the coolest in summer, and warmer than the warmest in winter.

As many wonder why the Hoffman frame has been pushed so to the front, I will explain the matter to my readers. GLEANINGS has an editor of rare ability as an observer, and a hard thinker, coupled with long years of experience and observation in many parts of the country. In contact with the bright lights of apiculture, he knows a good thing for the average bee-keeper at a glance; and the Hoffman frame, for the average bee-keeper, is the only thing for the average bee-keeper. Why? Because, without the Hoffman or a self-spacing frame it is almost impossible to induce beginners to space properly. I have taught bee culture to many, and find they all hang on spacing—can't space brood-combs close enough. The Hoffman frame does it, of itself, and is, of course, the only thing for the beginner, and rightly belongs in the front ranks; and as the old story holds true about the lady who carried a cow on her back, the Hoffman frame to begin with is always the frame. The way the lady came to carrying a cow on her back is this: She lived in a city, and had a little calf given her; and as it was not possible to leave it in the street nights she began carrying it upstairs, and got used to it, so it didn't bother her to carry a cow on her back. The Hoffman frames are the same way—only need to get used to them. I heard a leading light once say that they were beautiful, from the fact that they were absolutely "fool-proof."

Those staples for end spacing, that the catalog shows so plainly, should be driven in at the bottom corners of all frames, not at the top corner, as in cuts in catalog. When at the bottom corners you can snatch frames out or in, in a hurry, and not a bee be killed. W. L. Coggs shall be the leader, and user of such staples, and has been for years. Just try them, and you will wonder why any one ever put them at the top corners of frames.

Caimito, Cuba, May 12.

[We are very glad to get any thing of this nature, even if it is in the way of criticism of the goods put out by us or by any other manufacturer. But the Excelsior covers, the Higgsville, the Danzenbaker, and other three and four piece covers, are designed for the average of localities in the United States. But such covers, I am free to confess, probably are not as good as the plain flat board covers for hot and dry climates such as we find in Colorado, California, and even in Cuba; and it is possible that locality may have a similar bearing on bottom-boards. But it is al-

most impossible to get up a cover or bottom board that will suit all classes and all climates; and my impression is that the sooner supply-manufacturers make such covers for special climates, the better it will be for them and for their customers.

If there are any of our subscribers who desire to raise a good-natured "kick," or any other kind of "kick," I hope such a one will be free to let drive his pedal extremity clear into the editorial sanctum of GLEANINGS, which, for the time being, and for the convenience of "kickers," will be found anywhere from Medina to California and return. —Ed.]



MAKING SWARMS.

"Busy at the bees this morning, are you, Mr. Doolittle? Well, I'll hinder you but a few minutes."

"The man who is interested in his calling will always be busy with it, friend Jones; and when his body is not busy with them, as in the case of the bees, his mind will usually be actively engaged in planning for them, or for their future welfare. But what do you wish to hinder me about?"

"Only about two-thirds of my bees have swarmed, and I wish to make the rest swarm, and done with it; and what I want to know is, how best to do this."

"Many plans have been given in the past to make swarms of bees, other than by natural swarming, those advocating these plans believing that the apiarist could make his swarms to better advantage to himself, if not to the bees, than to have them swarm as their instinct directs; and from this cause many modes of artificial increase have arisen without much, if any, reference to the laws which govern natural swarming and the general economy of the hive, thereby causing a failure to a certain extent."

"Are there any special laws that govern bees in swarming? I thought they came out hap-hazard, just as each one feels at the time."

"I do not think there is any hap-hazard work in this matter. Evidently, the same laws that governed bees in their primitive state govern them now; and in all of the various operations conducted in the apiary, the bee-keeper should conform to these laws as nearly as possible, if he wishes to be a successful apiarist in the fullest sense of the word. A plan for making swarms, to be successful, must carry with it the taking of bees of all ages, and making them stay contentedly where put, the same as does a natural swarm."

"Do you think that necessary? My old neighbor, Smith, claimed that it was mostly old bees which went with the swarm."

"Many think that way; but after careful

observation, covering a period of 30 years, I am sure that bees of all ages, in about equal proportions, go with a prime swarm; and when any plan for making a swarm arises which compels the old bees, or field-workers, to become nurse-bees and perform the labors which, when the bees are in a normal condition, devolve on the young bees, we should not adopt it."

"Have you a plan which you consider meets all of the requirements of the laws governing the hive?"

"I think so, or, at least, as nearly as may be."

"Well, what is it?"

"Have you any queen-cells on hand?"

"I suppose there are plenty in any of those hives which have swarmed during the last week."

"You will see why I asked about the queen-cells before we get through. Now to the plan: Take a box holding from three pecks to a bushel, and place it on a wide board a few feet from the hive you wish to make the swarm from, raising the front edge on a little block, enough so the bees can run under. Now open the hive you wish to make the swarm from, and find the queen, caging her on one of the combs, when all the frames are put back in the hive again. If you do not see plenty of unsealed honey, uncup some along the top-bars of the frames and close the hive. Now blow in quite a little smoke at the entrance of the hive, and rap on the sides of it as you would in driving bees, rapping at intervals, and leaving the entrance open so that the bees returning from the fields may enter the hive. In from five to eight minutes open the hive and take out the frames and shake the bees in front of the box, and thus continue till you get at least three-fourths of the bees in the box. When you come to the frame which has the queen on it, place her at the entrance of the box and let her run in with the bees. When you get the desired amount of bees in the box, put the frames back in the hive and close it."

"Why do you run the bees into such a box instead of into a hive all prepared for them?"

"If you will not be impatient I will tell you so you will see the reason. Now, we will suppose that you have three-fourths of the bees, and the queen in your box. You are next to take the box of bees to the shade of some tree and lean the box against the tree in an inclined position, with the open side of the box outward, leaving it there three-quarters of an hour, at which time you will find them clustered in the upper part of the box as they would be on the limb of a tree, if they had swarmed naturally. During the three-quarters of an hour, if you have more to make, keep on making from other hives in the same way. At the end of the time, hive the bees that are in the box the same as you would hive any natural swarm. Put the hive on the stand you wish them to occupy, and see that all of them go into the hive, and they will stay and work the same as a natural swarm would."

"Then this leaving them the three-fourths

of an hour with the open side of the box out is to make them think they have left home, so they will mark their location as does a swarm?"

"Exactly."

"I see now why mine would not stay when I shook them into a hive. But what about what is left in the old hive?"

"The next day after making such a swarm, give the old colony a queen-cell from one of the hives you say have such, giving cells from the colonies which have those the nearest ripe, and the work is done. If you have stopped to think as we went along you will see that you have bees of all ages in your made swarm, just as there would be in a natural swarm, and that each bee has its sac full of honey the same as they do when they come out themselves, the drumming causing them to fill themselves full more completely than they do when swarming. By being left three-quarters of an hour to cluster in the box they mark their location anew, the same as a natural swarm, as you expressed a few moments ago."

"But is the old colony in as good condition as if it had swarmed naturally?"

"I think so, fully, and more so; for in natural swarming the first young queen does not emerge from her cell in less than seven days, unless the swarm has been kept back by bad weather; while with our made swarm, and a ripe cell being given, they will have a queen in two days from the time of making. If preferred, and you have them, a laying queen can be given to the old colony."

"Why would not this be a good plan to work an out-apiary, where there was no one to take care of swarms when they issue?"

"It would. And it is equally adapted for those who can not be at home between the hours of 8 A. M. and 4 P. M. to care for their bees when swarming naturally."

"Well, I have bothered you long enough, and think I understand how to work. Good day."



CROWFOOT AS A HONEY-PLANT.

In our locality it grows extensively, and I think it produces a nice lot of honey when it is the most needed, as it comes right after fruit-bloom and dandelion, and lasts from about May 10 till white clover comes.

Rohr, W. Va.

W. D. KEPHART.

ABSCONDING SWARMS.

I am a beginner in bee-raising. I had a swarm of bees Monday. It clustered on a limb of a tree. I cut the limb and laid it on the ground in front of the hive. After they entered the hive I set it with the rest of my hives, and they worked like little men on Tuesday, making 3 combs about 5 inches around, and on Wednesday morning not a bee

was remaining in the hive. Another colony sent out a swarm Tuesday, clustering on a limb. I hived them half an hour afterward, but they left the hive and entered the old hive. On Wednesday they swarmed again. I stopped them five or six rods from the hive, and they clustered on a limb. I cut the limb, and laid it on the ground in front of the hive. They all entered at 10 o'clock in the morning; by 7 o'clock in the evening not a bee remained in the hive. How would you account for such an occurrence? they were all large swarms.

CHRIS. KINSEL.

Dysart, Iowa, June 13.

[Such a case as you mention happens occasionally, although not very often. If you have the A B C of Bee Culture you will notice we recommend giving every new swarm a frame of comb containing a little unsealed brood. This unsealed brood will almost invariably hold the colony in any new hive. Sometimes the bees desert the hive because it is put right out in the hot sun. It is possible that the queen was missed in one of the cases you mention; therefore the bees left the hive as soon as they discovered she was not with them; but in such a case unsealed brood would hold them just about as well as the queen. In practice I should give every swarm put into any hive at least one comb containing brood. Then they will stay, no matter whether they have a queen or not; and if they have a queen, she will go to laying at once; and I think they always work better if they have the comb. Another thing, if this brood is present you will know at once when the queen is missing by finding queen-cells started inside of a few hours. Thus you see, unsealed brood, be it only a little patch in the comb, renders it unnecessary for you to get sight of the queen at all to be sure she is with the bees.—A. I. R.]

CANDIED COMB HONEY; USING SECTIONS CONTAINING CANDIED COMB HONEY.

I meant to drop you a line before, bearing on the position taken by Doolittle with reference to the use of sections containing candied honey, but have, as usual, been too much rushed to spare time for the purpose. I wish to say here that I am greatly astonished at such teaching from such a source, and wish to enter an emphatic dissent to the views expressed in the article referred to. I will say that I have had occasion to handle a great many lots of honey in past years, containing sections having more or less old and candied honey in the combs, and there is no question that either this honey does not become liquid to any extent while on the hives, or else it recandies (as one would naturally expect), after removal; and as the sale of such honey on a city market does as much as any one thing to prejudice purchasers against the use of comb honey (as they are quite sure to regard the presence of the candied part as a sure proof

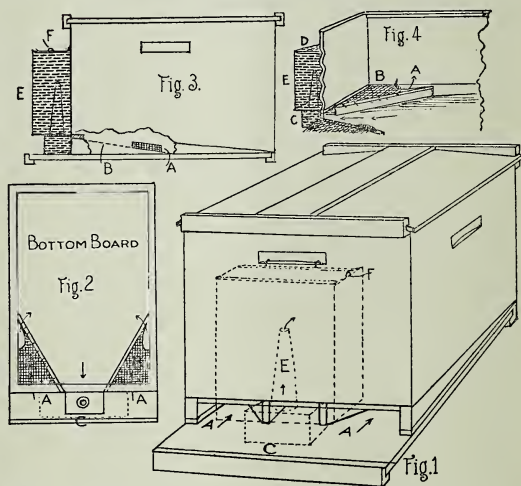
of the impurity of the goods), the practice in question certainly can't be too strongly condemned.

B. WALKER.

Battle Creek, Mich., May 10.

AN IMPROVED DRONE-TRAP.

The inclosed drawing is a queen and drone trap that I have made. I work my hives for extracted honey, so of course I do not have any swarms—at least not for the four seasons I have owned bees. It catches the drones all right, from the fact that, in their first flight, they do not discover the side entrance, but go toward the light in the front of the hive. I have concluded the queen would do the same. The field bees (the majority) use the side entrance as an exit too. They are not bothered with the perforations, and the pollen is not brushed off their legs. In comb honey it



FRICK'S QUEEN AND DRONE TRAP.

AA, entrance.
BB, wire cloth.
C, guard.
ED, trap for drones.

would send them up the sides into the super, which, I understand from your journal, is an important factor.

HENRY N. FRICK.

North Wales, Pa.

[The object of this improvement, as I understand it, is to make it unnecessary for the field bees to go to and fro through perforated metal. To accomplish this the incoming bees go through that part of the entrance (the two sides) that are not obstructed at AA, pass under the wire cloth BB, finally reaching the orifices at the corners, or as indicated by the arrows in Fig. 2, and by A in Figs. 3 and 4. The drones and queens would, of course, rush for the first time (as do the workers also) toward the light, and there would be barred by the perforated metal, when they would be trapped by the cone opposite E in Figs. 3 and 4. The workers soon learn the trick of going through the unobstructed way, and, of course, would not pass the metal.

The objection to this trap is that of expense and the difficulty of fitting it to various styles of hives. After all, the regular Alley trap will be just as good and much cheaper. If the perforated metal is of the Tinker style the bees can pass it with little or no hindrance.—E.D.]

A NEW DRONE-TRAP.

If you want a perfect drone-trap, cut a saw-kerf in the side-bars on the deep side of the Danzenbaker bottom-board, an equal distance from the edge and bottom-board proper; tack some $\frac{3}{8}$ -inch strips to the bottom-board, and slip a sheet of perforated zinc in the saw-kerf, and allow it to rest on the strips. Turn the end of the zinc up and tack it to some blocks on the front of the hive, and set an ordinary drone-trap, minus the bottom part, over it. The drones will escape through the upper entrance thus formed, while the one next to the bottom-board will be left free for the exit and entrance of the workers. There will be no danger of clogging or suffocation.

An ordinary excluder placed on a bottom-board with an entrance above and below the excluder, with a drone-trap adjusted to the upper entrance, removes the objectionable features of a drone-trap so far as the trapping of the drones is concerned, and does not interfere with the progress of the workers at all, further than forcing them to pass through the excluders. W. H. PRIDGEN.

Creek, N. C.

BEE-KEEPING IN OKLAHOMA.

Mr. Root:—Did you know there were bees in this new country, and that the business is growing? Two years ago I had the only bees in this neighborhood; now there are some ten or twelve men keeping bees. Our honey is from sumac and cotton. You no doubt know what it is—white and light amber—and it sells as well here as the alfalfa honey that is shipped in. My average, last season, was 66 lbs. per colony, spring count. The season is somewhat backward. Bees are just beginning to swarm, which is about ten days later than last year; but I hope they will make up the lost time.

F. W. VAN DE MARK.

Ripley, Okla., June 6.

SWEET CLOVER FOR HAY, ETC.

Is melilot, or sweet clover, of any value for hay? and, if so, when should it be cut? Can it be cured sufficiently to mow away? I have several acres in my pastures, and this wet weather of the past few weeks has pushed it till no grass will grow beneath it. Stock will not eat it green; but mules and hardy Canadian horses are said to relish the hay made from it.

S. S. FETHEROFF.

Era, Ohio, June 10.

[Friend F., you evidently have not been reading GLEANINGS very long, for this matter has been most fully discussed for several years past. Horses and cattle, after they have once acquired a taste for sweet clover, either green or cured, as a rule prefer it to any other

kind of hay. If cut before it gets tall, so as to be hard and woody, it makes the best kind of hay that I know of for all kinds of stock; and I can not remember that I have ever seen any stock that would not eat it when thus cured. See pamphlet we are mailing you, free of charge, that tells all about sweet clover.—A. I. R.]

WHY DID THE SWARM GO OFF TO THE WOODS?

I had a swarm issue June 17, with a clipped queen. I caught the queen, and moved the old hive away—set a new one in its place with starters. The bees settled close by. I had every thing ready. I gave the cluster a little smoke, and they started back. I put the clipped queen at the entrance, and she went in. The next day they came out again, and I picked up the same queen and caged her; but the bees did not stop—they went to the woods. Do you think they had two queens in the hive? WM. FOX.

Longwood, Wis., June 19.

[This case is evidently one where there were two queens in the hive—mother and daughter. At this season of the year this thing is not so very unusual. The clipped queen was getting old, and the bees had reared another, and both were very likely laying eggs right along together. Of course, the bees did not care particularly for the old queen, so they went straight for the woods, where they had probably selected a home some days before the swarm came out.—A. I. R.]

HATCHING DRONES FROM QUEEN-CELLS.

Before it slips our mind, we desire to report the hatching of a perfect drone from a queen-cell. Cell was cut from a comb of a choice colony of Italians, and placed in a queen-cell cage, the same being put into a nursery. I do not remember seeing or having any thing of the kind happen before, and so thought it worth while reporting. There was no chance of a slip twist cup and—in this case.

H. G. QUIRIN.

Parkertown, Ohio, May 21.

A GOOD REPORT.

There is one of the finest honey-flows here now that we have had since 1897. In fact, the white clover lacks but little of being as plentiful as it was then. But I find a great many more bees on red clover than on white. The honey is just rolling in. I have a good many colonies with the second super on. I commenced to raise the first super up the 15th of June. Basswood is going to be simply grand. CHAUNCEY REYNOLDS.

Fremont, O., June 21.

Half of the bees or more have died here, and in near-by towns, where they have been wintered out of doors. The season was wet and cold up to June 1. We have now had a few fair days, raspberry just beginning to bloom. Bees have commenced swarming where they have wintered well.

N. D. WEST.

Middleburgh, N. Y., June 7.



NATIONAL BEE-KEEPERS' ASSOCIATION.

OBJECT:—To promote and protect the interests of its members; to prevent the adulteration of honey.

OFFICERS:—E. R. Root, President, Medina, O.; R. C. Aikin, Vice-president, Loveland, Col.; Dr. A. B. Mason, Secretary, 3512 Monroe St., Sta. B, Toledo, O.; Eugene Secor, General Manager, Forest City, Iowa.

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FEES:—Annual membership fee, \$1.00. Remittances may be sent here or to General Manager as above.

In the *American Bee-Keeper* which has reached me on the fly I see that Editor Hill has replied to the editorial on page 476 of GLEANINGS regarding the matter of high values on queens. While I differ on many of his points, there is one on which I feel constrained to acquiesce; viz., that, if one owner of some really valuable queen places a high value on her, other breeders, perhaps less scrupulous, may put equal or higher values on breeders comparatively mediocre or even poor. As the matter is liable to abuse we have decided to place no values on breeders which we propose to keep and will not sell. But queens from such choice stock, best we have, we may hold all the way from \$10.00 to \$25.00.

✓ THE BEES AND PEAR-BLIGHT IN CENTRAL CALIFORNIA.

On the train to San Francisco, June 21.

It has been charged by the fruit-men at Hanford, Cal., that bees are responsible for pear-blight through the medium of the blossoms in the spring. There were threats of the law and of the poisoning of the bees. As an officer of the National Bee-keepers' Association I was asked to come and investigate, which I did. Result, a truce was declared, and a compromise agreed to pending an investigation. For the time being good feeling on both sides prevails. Full particulars later.

E. R. Root, Pres. N. B. K. A.

"GO WEST, YOUNG MAN."

THIS is sometimes good advice and sometimes it is not; but there are many locations for bees in the South and West not yet occupied. These are *not* in fields already occupied by bee-keepers, and generally overstocked, but in new locations about to be irrigated. As fast as enterprise and capital can move onward, places now desert that will hardly support jack rabbits and coyotes will be converted into veritable gardens of Eden, raising the richest vegetation of the tropics. I have seen many such places during the last few days on my travels, that, fifteen years ago, were barren wastes with very scanty vegetation, but are now growing alfalfa, great trees, oranges, lemons, peaches, pears, and a long list of luscious fruits too numerous to mention. The fields already occupied by bee-keepers are, as

a rule, overstocked, and no one should go into these territories without buying some one out.

Now, don't think that I am interested in some new tract of land for myself or any one else, for I am not. One who goes west should be very cautious, for many a poor man has been fleeced by the land-sharks that are all too numerous. I'll have more to say on this subject later, and until then the prospective home-seeker had better go slow if he is following in the wake of my travels.

THE MAGNIFICENT DISTANCES IN CALIFORNIA.

THERE are "magnificent distances" in California. On the ordinary map it *looks* as if the town of one bee-keeper in the State might be close to that of another; but when one gets here and finds that they may be two or three hundred miles apart, he concludes that he won't visit both in the same day—at least that has been my experience. While I was traveling through this State of the setting sun at home, "on paper," I saw, for example, that one bee-keeper whom I desired to visit from a central point where I expected to make my headquarters was "only over in the next county," and that I could easily, in imagination, wheel out to him in a few hours. Well, when I got here, and found that he was 200 miles away, and that some eastern States could be spread out inside of one of these California counties—yes, two of 'em—well, I stood aghast. My time was very, very short, and my pocketbook ever so small. I say this in apology for not calling on some of my friends along the route. The same thing was true of Texas, and, for a like reason, I missed seeing several whom I had planned to meet in the Lone Star State. I shall make between five and six thousand miles, all told, among the bee-keepers of this great, great West; and, although I have made many stops, and kodaked as many apiaries, I still find that there are very many that I ought not to have missed.

This is written while I am stopping with Rambler at the home of J. C. McCubbin, Reedley, Cal.

CHARACTERISTICS OF BLACKS AND ITALIANS.

ONE of the few who prefer black bees is C. Davenport, although he calls them "brown" bees, and says there is as much difference in brown bees as there is in Italians. In the *American Bee Journal* he gives his reason for preferring the dark bees, a preference based on years of experience on a large scale with both kinds side by side. That experience teaches him that he can secure more surplus white comb honey in his locality with the brown than with Italians. He says:

"The main trouble I find with Italians is their determination to stuff the brood-chamber at the commencement of the flow, and I have never been able to overcome this trait. And then, after they have put anywhere from 15 to 30 pounds of white honey in the brood-chamber which should have been in sections, instead of then being willing to work in sec-

tions they are usually determined to swarm." In this respect he thinks the brown bees better. It would be very interesting to know whether other localities or other management would lead to the same conclusion. Certainly there are fine crops of comb honey secured by Italians. What makes the difference?

As Mr. Davenport avowedly prefers and keeps black bees, his testimony in favor of Italians should have weight. He says:

"For extracted honey I prefer Italians. They will gather more honey, go a greater distance, and protect their hive and combs from the ravages of the moth-worms much better than will brown bees, and this is no small matter in my locality.

"Some claim that moth-worms never injure strong colonies of any kind of bees; but this is a mistake, for the combs will be injured, and hundreds of eggs, larvæ, and hatching brood, will sometimes be destroyed here by moth-worms in strong thrifty colonies of brown bees."

RED CLOVER—HOW IMPORTANT IS IT?

THE desire to obtain the nectar secreted by red clover is one of long standing; and the common impression is that a very large quantity of nectar per acre would be secured from it if the flower-tubes were not too deep for the reach of the honey-bee. Latterly some discredit has been cast upon red clover as a honey-plant, even supposing that all its nectar could be secured, by the fact that it is not a plant of universal cultivation.

There are a few plants that yield an enormous amount of nectar; but as they are kept only in greenhouses, averaging less than one plant to the acre, they are valueless from a bee-keeper's standpoint. If, however, any good honey-yielder were widely distributed in dense quantity over a single State, then it would assume some degree of importance. The buckwheat crop of the State of New York would be no trifling matter, even if not another acre of buckwheat were found elsewhere in the United States. If it were possible to obtain certain bees that would double the buckwheat-honey crop of New York, the amount of money gained by that would warrant no small outlay. Is it not possible that there are single States in which the nectar secreted by red clover would amount to several thousand dollars?

But is red clover confined to a rather limited area? It would be interesting to know just what is the average acreage. Lacking that, some estimate may be made from the amount of clover seed raised. The government statistics give us the figures, and it is probably safe to infer that by "*clover seed*" is meant that from red clover. According to the last census available, that of 1900, an amount of clover seed, large or small, is given as being raised in every State and Territory of the United States except Montana and Wyoming. Certainly that shows that it is not confined to so small an area as some suppose.

The North Central division leads with a product of 2,544,864 bushels. The South Central comes next with 77,783 bushels; the North

Atlantic, 71,128 bushels; So. Atlantic, 35,155 bushels; Western, 24,250. Total, 3,753,180 bushels.

That shows a very unequal distribution; but the distribution of the growing plants is by no means what the figures would indicate. From the States that are the greatest producers, as New York and Pennsylvania, large quantities are exported, and, of course, other States import, thus making the acreage grown in the different States much more uniform than the amount of seed produced.

If all the seed raised is sown again—and it is not likely that it is ever used for any other purpose—and if a peck of seed is sown to the acre, it would cover a little more than eleven millions of acres. To speculate as to the amount of honey that could be obtained from this acreage would be outside of the present inquiry, and it is doubtful as to there being sufficient data to justify any thing like a reasonable estimate. It is only desired to show that the aggregate of red-clover territory is no trifling affair, and that it is widely distributed.

BEE-KEEPING AS A SOLE BUSINESS.

ONE of the questions likely to occur to every young bee-keeper who has made a substantial success with a few colonies of bees may be worded in some such terms as the following: "Can I make a good living at bee-keeping alone?" On this account comes very frequently the question as to what may be depended upon as the average yield or profit from a single colony of bees, or the question, "How many colonies of bees shall I need so that I may depend upon them alone for a living?"—questions which no man living can answer definitely.

C. Davenport gives the matter some discussion in the *American Bee Journal*, and settles the question as to whether one can make a living at bee-keeping alone by saying he *has* done it. But he says his is a good locality, and that he has no wife or family to support, and adds, "While I would not advise a young man to take up bee-keeping as a lifework, in my opinion there is no question but that a living can be made at it in a good locality if one understands the business."

While he may be entirely right in this, there are those who would not be in accord with his ideas when he says, "If I had my life to live over I would not be a bee-keeper; for I believe the work I have done to make what might be called a success in our pursuit would, in some others, have resulted in better success financially, and also in other ways." It is just possible that, if Mr. Davenport could live his present life through, and then live another life without bees, in some business at which he could make more money, he might give his judgment as follows: "I must say that, after having lived the two lives so that I am now able to judge between them, I prefer the bee-keeper's life, which, although giving less opportunity for amassing wealth, gives one the opportunity for a greater amount of happiness."

Taking the expressions of some of the veterans who have been in the business many years, we might suppose one of them near the close of life to express himself as follows :

“Judged from the standpoint of those who measure success in life only by the amount of wealth accumulated, my life has not been a great success. Folks compare me with my brother John, and have a feeling for me akin to pity. John and I started life with equal chances; and, if I may be allowed to judge, John had no more business ability than I. He went into merchandizing, and devoted all his energies to making money. He said he did not care for money, only as it would allow him to have something he could enjoy; and when he got enough he would give up the drudgery and enjoy life. But somehow he kept on piling up more and more, turning his business talents in this direction and that; and although to-day he could buy and sell me many times over, I don't believe he enjoys life any better than I. I have all I can eat, and that's all he has in the way of food. He may buy dainties that I can not afford, but his dyspeptic stomach will punish him for eating them; and, having spent so much of my time outdoors all these years, I have a hearty appetite that makes me relish plain and wholesome food more than he relishes dainties. The great difference, however, between John's life and mine is that, in the past years, his has been one of continual drudgery, and mine has been one mainly of enjoyment. I've had my good times as I went along. Working at the bees has been just as good sport as going hunting or fishing, and it's a sport of which one never wearies. So you see my playtime has not been something to look forward to in the future, but something I've had all along. No, with all his wealth I wouldn't swap places with John.”

Some one may say, “That's very pretty talk; but my experience has been that there's hard work in bee-keeping, and lots of it.” Sure. But isn't there hard work in nearly all kinds of play? Do you work any harder at bee-keeping than you do when you hunt or fish all day? Do you begin to work as hard as the man who plays ball till he is as red as a beet in the face, and is so sore and lame at night that he can not lie still?

AS TO EDITORS OF BEE-JOURNALS.

It seems to some a matter of reproach that editors of bee-journals are not completely informed on all topics nearly or remotely connected with the subject of bee-keeping. On page 332 Arthur C. Miller complains of the silence of the text-books and the ignorance of editors as to the laws of heredity and the principles of breeding; and now F. L. Thompson, in *Progressive Bee Keeper*, takes up the refrain at still greater length. This reproach against the ignorance of bee-editors does not seem to be bitterly resented by at least one editor, for the editor of *Progressive* makes no word of reply, and it is not likely that any other will attempt to deny the charge. No one is more likely than the editor of a bee-journal himself to be conscious of his need of

information; and the reproach that he has not yet learned all that is to be known about bee-keeping is likely to strike him much as would the reproach that he has not strength to live on without eating.

The mistake that Mr. Thompson seems to make is in supposing that editors of bee-journals pose as the repositories of all knowledge on the subject of bee-keeping. If bee-keepers had any such view, then their journals would be made up entirely of editorials. But at the present day no bee-journal is conducted on any such line. Instead of being filled up entirely with what the editor has to say, the bee-journal of the present day seeks contributions from all quarters. If any bee-keeper has had special opportunity for becoming particularly well informed on some one subject connected with bee-keeping, contributions from him upon that subject will be eagerly sought. Instead of a bee-journal being a mouth-piece through which one man seated on a pinnacle may deal out wisdom to the common herd below, it is, rather, a clearing-house through which may pass in exchange the gathered wisdom of all.

Still greater is the mistake that a bee-journal should seek to repress knowledge upon a subject with which the editor is not entirely familiar. Having learned that an article having some reference to the matter of scientific queen-rearing had been sent to appear in the columns of this journal, Mr. Thompson says, “I fear that either it will never get there, or, if it does, it will be accompanied by a crushing footnote, written more in sorrow than in anger.” If he will turn to page 382 he will find the article in question, with a footnote not at all “crushing,” containing neither sorrow nor anger. So far from that, he will be rejoiced to find the footnote only commendatory, saying, “Bee-keepers have much to learn from the breeders of other fine stock,” and his joy will be increased to find that sufficient progress has been made to commend heartily in-breeding on the lines indicated. No, the bee journal that seeks to repress knowledge that may benefit bee-keepers in general would be committing suicide. The watchword with all should be, and probably is, “Let there be light.”

R. WILKIN—CAREER OF A REMARKABLE MAN.

R. WILKIN, whose death occurred just before the writer reached there, was one of the pioneer bee-keepers on the Pacific coast, going to California in 1875 with a carload of bees, and subsequently settling in the Sespe Valley.

His first experience with them was in helping to prepare a shipment of bees for Mr. Harbison, who was then about to leave Pennsylvania (where he was then residing) for California. This was some time in the early '50's; and the result of this venture, and how Harbison subsequently came to be the great bee-king of California, owning and operating at one time some 6000 colonies, are matters of history.

Mr. Wilkin began keeping bees while he

was at Westminster College, Pa. The next we know of him in connection with bees was at the county fairs of Northern Ohio. On these occasions he astonished the natives by having a swarm of bees hanging from his hat and beard. This series of remarkable feats was accomplished by having a queen caged under his chin; and as long as she remained the bees continued to hang from his head, to the wonder of the aforesaid natives. It is not told that he was ever stung, except on one occasion, when he says he very foolishly attempted to put some of those gentle, fly-like bees in his mouth. The incident resulted in his being stung in the throat, and from that time on he never attempted the feat again.

At this time Mr. Wilkin's home was at Cadiz, Ohio. From this point he attained considerable celebrity as a bee-master; and so many were the questions that were plied him that he finally, to answer all, wrote a book of 100 pages, entitled "Hand-book on Bee Culture," which at the time, 1871, had a considerable sale.

Just what induced him to go to California is not stated. Possibly the success of Harbison, who had preceded him, had much to do with it; but after he had gone to the coast in 1875, with his family and a carload of bees, and had produced those enormous yields of sage honey in the now celebrated Sespe Apiary, his celebrity, which had hitherto been only local, was made world-wide. Here he produced honey by the carload, and sold in the London markets for a number of years.

His largest yield was in 1884, when he produced from his Sespe Apiary 60,000 lbs. of honey. The largest number of colonies he had in this yard at one time was 700. Such a number managed profitably, in one apiary, seems, to an Eastern bee-keeper, almost incredible. But to one who has just come from the location, as I have, with its great mountains on every side, and the orange groves in the valley, the number does not seem so impossible of belief after all. Indeed, to see is to believe.

In later years the Sespe Apiary has been occupied by his son-in-law, J. F. McIntyre; and during all the years this location has supported on an average 500 colonies.

Mr. Wilkin, even up to the time of his death, retained a deep interest in bees; and, though his success in life had been such that it was no longer necessary for him to work, yet at the time of his death he was managing an apiary at Newhall, Cal., some 450 colonies, I believe.

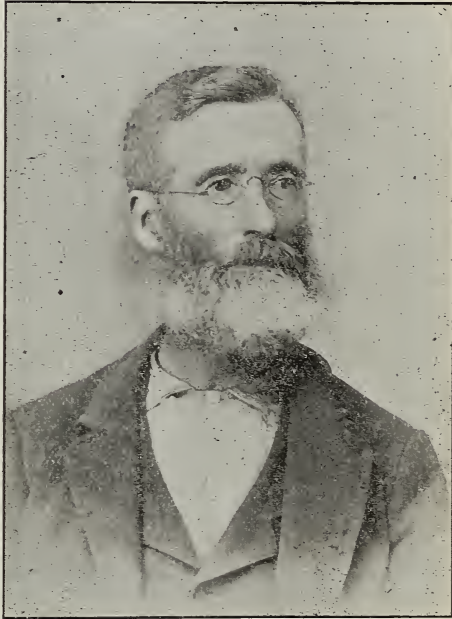
A few days before his death he had sent me a pressing invitation to visit him, saying that, although he had got to be an old man, there was much that he wanted to talk to me about on bees, and it was with no little surprise and sorrow that, on arriving at Los Angeles, I learned of his short illness and death.

Although well advanced in years, when most old men lose interest in the business of a lifetime, Mr. Wilkin retained all the enthusiasm of youth. His love of bees seemed to be as strong as ever; and even up to the last days his mind seemed to possess all the vigor

of his earlier years. A college graduate, it is said of him that he was "a close and profound thinker."

His daughter, Mrs. McIntyre, who had been called to his bedside at his last illness, told me recently that he seemed to count much on my visit, and at the time had no thought but that he would get well. Among other things he told her that, when I came, he would show me some old brood-combs that he got of Adam Grim that were 30 years old, and which at the time were still in use, rearing bees that were full size. Evidently he had no faith in the late dogma that old combs raise small bees, and should, therefore, be melted up.

Mr. Wilkin was twice elected President of the California State Bee-keepers' Association, and in all the doings of that organization was a prominent and conspicuous figure. There



R. WILKIN.

is many a present-day bee-keeper in the State who will remember the kindly services performed for them by our departed friend; and although he is gone he will not be forgotten.

N. B.—For the main facts of this write-up I am indebted to his daughter, Mrs. McIntyre, who, I judge, must, in years gone by, have been an efficient helper to her father. At a later time I shall have occasion to refer to my visit to the McIntyre's, all of whom, including the baby, are bee-keepers, from the ground up.

This is written on the train, *en route* to Fresno, Cal., and if Mrs. McIntyre finds any inaccuracies it will be because this jiggly-jiggly train has jiggly-joggled my memory.



And the nations of them which are saved shall walk in the light of it; and the kings of the earth do bring their glory and honor into it. And the gates of it shall not be shut at all by day; for there shall be no night there. And they shall bring the glory and honor of the nations into it. And there shall in no wise enter into it any thing that defileth, neither whatsoever worketh abomination, or maketh a lie; but they which are written in the Lamb's book of life.—REV. 21: 24-27.

Years ago I said in these Home Papers that Revelation was a very hard book for me to understand; but I have said at different times, also, that, as I grow older, the book seems to unfold—at least certain parts of it. A few days ago we had a certain portion of this book for a Sunday-school lesson. In our morning reading I frankly acknowledged to Mrs. Root that I could not understand or explain it. I said further that the explanations given in commentaries and by doctors of divinity did not seem to me the correct ones. I felt somewhat encouraged later on to find that one of the very best lessons—helps I know of said substantially the same thing—that there are so many differences of opinion, even among learned scholars, as to the real meaning of certain passages, that it was very likely no one had as yet struck upon the true meaning. Skeptics might throw it up to us that a great part of our precious Bible no one could understand, and perhaps no one ever would understand.

Well, even if this is true, there are passages all along through the whole Bible, and even in the book of Revelation, that are so much in advance—so far superior to any words of any other book ever written, that we have at least very good reason for believing the Bible to be divinely inspired, or, if you choose, for believing it to be the work of God and not of man. The words that I have put at the head of this talk, from the next to the last chapter of Revelation, form one of these wonderful and beautiful passages. The description seems to be of the holy city. The first words, about there being no darkness and no night, would indicate it would afford no harbor for those who love darkness rather than light. The next verse tells us that this city is so great in area that *nations* shall walk therein; and we are told the gates of it shall not be shut at all by day, and that there shall be no night there. It is a pleasant thought about the gates being always open; and, in fact, we may suppose there is nobody there, outside or inside, to be kept out. I suppose there are no policemen there, for everybody *wants* to do right. The glory and honor of all the nations of this earth shall be brought into this holy city. The last verse is the crowning one of all, the cappingstone of the citadel—"There shall in no wise enter into it any thing that defileth; neither whatsoever worketh abomination or maketh a lie." I can imagine how the average man of the world who never gives much thought or attention to the Bible or Christian-

ity would receive any such statement. He would probably laugh and jeer at the idea; and if he would tell you the whole truth that lies right down at the bottom of his heart I do not know but he would say he did not wish to live in any such place. Such a state could be congenial only to those who love righteousness and hate iniquity.

Some might ask, "When is all this coming to pass? when shall we have that new Jerusalem?" I for one do not know. I know it is coming, for the Bible tells us so. Its promises are scattered all through, from the first page to the last. We are told in substance, over and over again, "Blessed are they which hunger and thirst after righteousness, for they shall be filled."

I know there has been a great amount of dispute about this whole matter of the new heaven and a new earth. Some claim that at death we are ushered into the new Jerusalem. Others say it does not come to pass until the judgment day. As for myself, I do not see why we should waste time or thought in regard to this matter where there are so many differences of opinion. We have God's promise, and that is enough for me. "Shall not the Judge of all the earth do right?" I am willing to trust *him* to manage the whole matter. I do not even believe I can afford to read the books and pamphlets that are sent me, arguing on different sides of the matter. Jesus said to the thief on the cross, "This day shalt thou be with me in paradise." Of course, I know some maintain that "paradise" is a wrong translation. But that would make no difference to me. If I am to be where Jesus is, I am content. I ask nothing more.

But, friends, God has not seen fit as yet to usher us into this holy city. He has placed us here in this world of ours to work. I am sure of that. He did not put us here to idle away our time; and we are to work either for righteousness or iniquity. Which shall it be?

Perhaps I have said a great deal of late in regard to the wickedness that seems to be abroad throughout our land and throughout the whole world at the present time. Dear friends, I am not oblivious to the good that is also abroad. I assure you I am looking on with joy and thanksgiving and praise to note the progress that is being made in praiseworthy directions. I love to read our daily papers. Perhaps I had better say I love to read our *good* dailies; for when I am away from home I pick up daily papers here and there that I do not love at all. I often read them, however, even if with pain; and sometimes I read them, too, with shame. I feel ashamed that our people, with all our present enlightenment, should encourage and sustain papers that seem to say on the face of them that they love iniquity rather than righteousness. But even in the worst of our dailies we find a record, more or less, of good things. The world at large is climbing out of many of the abuses in which we have for long ages existed. I think the general trend is upward; yes, and in some directions we are making marvelous progress. The experiment stations of the world are achieving wonders in the

way of separating truth from falsehood and superstition, by real scientific research—a research that is managed with sense and reason. Our government bulletins from Washington are also doing grand things in teaching the world at large honest and substantial truth. By the way, I have been greatly pleased with the bulletins discussing the real value to the human family of certain articles of food. There has been one published in regard to beans, another in regard to sugar. In considering the food value of these articles of regular diet, we have had another one recently all about eggs for food, and all of these bulletins are scholarly efforts. I think the writers come very near the exact truth. Now, why can not the United States, in the same way, give us a calm, honest, and unprejudiced discussion in regard to tobacco—this crop for which we spend about 600 millions of dollars annually. I wish I had influence enough with the Agricultural Department at Washington to induce it to publish a bulletin with a heading something like this:

"Tobacco, and its General Effect on the Human Family. Should its Cultivation and Dissemination be Encouraged or Discouraged?"

Then I should like to have a closing chapter something like this:

"The Effect of Tobacco on Children and Young People. Should its Use be Prohibited to those under a certain Age? if so, what Age? Also a Consideration of the Cigarette Habit."

Now, if the above suggestion is not a proper one for a bulletin, will the authorities at the heads of the proper departments explain why the matter can not be discussed just as honestly and frankly as these bulletins I have mentioned discuss the food (and health) value of beans, sugar, eggs, etc.? Surely Uncle Samuel can give even one of the humblest of his subjects a fair and frank answer. If tobacco comes under some other head, *why* does it? Our country is doing great things in the way of sanitary measures for the protection and preservation of the health of our people. We are making great strides in many directions. We are even able to go into cities of foreign lands and drive out contagious fevers that have existed there for ages. In the matter of sanitation we are able to teach every nation on the face of the earth. If there is any thing that blocks the way and hinders our being able to grapple with something like tobacco, that ruins more bodies and souls than any thing else in the world, unless it is strong drink, what reasonable excuse can there be for evading or avoiding the subject? May God help us.

I told you some time ago there was something I feared more than intemperance—yes, I may say more than intemperance and tobacco; but I suppose the reason is because intemperance exists largely *because* of this thing I fear. It is the disregard of law. I think I may say the great disregard and ignoring of law—not only the laws of our land but the laws of God—the laws of truth, honesty, and fairness. Excuse me if I go over ground that I have touched a great many times already.

The people voted to have intemperance excluded from the army as it had been from the navy. The brewers and saloon men were furious. They declared the law should not stand, even if they had been fairly and squarely beaten by the temperance people. But they were in a corner, and there was no honest way out of that corner. There was no *legal* way out of it. In this crisis Griggs, backed by the brewers, perpetrated the notorious "nullification act." I presume he and those back of him laughed because we in our turn—at least some of us—felt "furious." There was a universal feeling of indignation growing and spreading all over our land. The powers that be evidently decided it would not be wise to try the patience of the Christian temperance people any further in that direction. They finally gave us the law we should have had a long time ago. But now the brewers and whisky men are furious once more. They have been forced to admit that in honest, fair fight, we are too much for them; and just now they are leaving no stone unturned to accomplish by foul falsehood, and with money, a thing they can never bring to pass by fair means; and the contest is now going on right before the eyes of the people of America. Which will win—falsehood with millions of dollars back of it, or truth and honesty with nothing back of them except the conscience of our people?

Some of you may say, as has often been said to me, "Mr. Root, this is a comparatively small matter—an exceedingly small one compared with other things that need prompt and immediate attention." But I do not agree. If falsehood wins in this case it is going to win in every other one, and we as a nation will soon be bound hand and foot with Satan's shackles. The strings of falsehoods would not trouble me so much if they were only confined to the liquor-dealers' periodicals. Neither would I feel greatly troubled if our great dailies once in a great while gave place to them by mistake, and would promptly acknowledge, when furnished adequate proof, that they had been wrongly informed. Of course, I mean they should make acknowledgment as public as they made the falsehood public. I allude to the stories that are now current almost everywhere about the disastrous results upon our soldiers since the closing of the army canteen. Evidently quite a few of the readers of GLEANINGS seem to think I am reading only one side of the matter, and am not posted. I judge from clippings from different periodicals sent to me. The great dailies that we have considered reliable, and honest and fair, have, by some process unknown to me, been induced to lend their aid to circulate falsehoods. Worse than all, as I have told you, proof after proof, furnished by mayors and other officials, with sworn statements, have been forwarded to these editors, asking them to recall the whole-cloth falsehood they had been induced to print in their columns; but the only reply has been to reprint the same falsehoods in a more aggravating form, and to continue that policy. While I write, clippings are before me from the fol-

lowing papers: New York *Herald*; Washington *Times*; New York *Journal*; Chicago *American*; New York *Evening Post*; Tacoma *News*; Chicago *Chronicle*; Atlanta *Journal*.

I have given the names of papers from different cities to show how universally this thing is carried on, and how systematically it is managed. Not one of these periodicals, at least so I am told by some of our most reliable papers, has consented to publish a retraction of their false statements. If this thing keeps on would it be any thing strange if a large number of well-meaning — well, say Christian voters, should decide they were mistaken, and that this army canteen was really a temperance (?) institution as all these dailies, and perhaps a thousand other papers, would lead us to think? I do not know why so many periodicals have gone into this thing. I do not know whether it is because the managers love drink themselves, or whether the brewers have bought the space, and have bought it on condition that these editors should not print the truth, even when it is proven to them beyond all question.

I have been told from childhood that lies do not carry the day *very long*. My father used to say, perhaps in language not very elegant, that even the Devil would hang himself if you give him rope enough; but I confess I have begun to fear of late that the brewers, with their millions, have got out some patent-right way of managing the Devil so that he does not show his hoofs and horns as he used to do after he had been given about so long a time.

In olden time, we are told, there was a certain people who said by their acts, if not in words, "We have made lies our refuge, and under falsehood have we hid ourselves." Isaiah does not tell us very clearly just how far these people got along under that sort of cloak and refuge; but I am really afraid the brewers are going to make a great deal of trouble just now unless the *church of God* bestirs herself. A few religious periodicals are helping to expose these falsehoods. The strictly temperance papers are all fighting valiantly; but unless the church, and a united church, takes hold and helps us, I really fear the canteen will be re-established, and that, too, by the votes of well-meaning but foolish people.

Do you ask me for proof that *I* am right? Well, if you want straight clear proof, go yourself to any one of the forts where it is claimed these new saloons have been started, and witness the strings of lies that have no foundation whatever. If you will be satisfied with the affidavits of the mayors and officers of the town, and with the statements of some of the army officers and chaplains besides, in those places where are located the soldiers' barracks, you can find them in any of our temperance papers, some of them reproduced in *fac-simile* by the photograph.

The closing words of our text tell us that no one shall enter the holy city who "worketh abomination or maketh a lie;" and I have sometimes wondered what place would be accorded to good people who stand about with their hands in their pockets, figuratively,

while these frauds are perpetrated, and pass through the medium of the press into almost every home in our land. May God help us; and may God help me to be sure that I am making no mistake and holding up a warning again and again about something that is, as some tell me, only a comparatively small matter after all.

Just one thing more: If a paper comes into your home, making these statements in regard to the disastrous results of shutting up the canteen, remonstrate with the editor. If he pays no attention to your protest, subscribe for some paper that is willing to tell the *truth* in regard to the drink-traffic.

Permit me to say that I have never seen in the Cleveland *Leader* one of these preposterous statements. On the other hand, they continue to give us brief editorials in the cause of truth and temperance every little while. If our people would promptly protest to the editors themselves whenever these false statements appear, they would soon conclude that their championing the brewers may prove to be, after all, an expensive piece of business.



GETTING LOST IN THE FLORIDA WOODS.

When I came into Oak Hill, Fla., on the automobile, as I have told you about, I was putting on considerable style — that is, considerable for *me*. But a great many times in my travels I make my appearance before beekeepers without very much style — in fact, sometimes without any style at all. Once or twice I have received a gentle rebuke. When I was passing on that long trip over the Ozark Mountains, in Missouri, I called on a subscriber to GLEANINGS who had a very pretty greenhouse. He looked me over and finally said right out:

"Why, Mr. Root, I can hardly understand how a man occupying the position you do would wish to be seen riding about the country in this eccentric style, far from home, on a *wheel*."

I tried to explain to him that I was doing it just for the fun of the thing, because I loved adventure; but a good many times his kindly reproof occurs to me. Several times I have promised Mrs. Root — yes, I have promised myself, after getting into a disagreeable fix — that I would try in the future to be a little bit more dignified, and not rush things so much.

I reached the station at Sanford, Fla., before sundown. I remembered there was an old friend of mine a little way out in the country, Mr. J. A. McMillan, where I had a most pleasant visit six years before. I inquired at a livery stable what they would charge to take me out there. They wanted a pretty big price, I thought; and as I had been riding in a buggy nearly all day I felt a good deal like walking. In fact, I walked out there six years be-

fore, and, as nearly as I could remember, it was only a mile or a little more. I knew it was not far from Fort Reed, where there is a little settlement and a store. If it took me till after dark I figured I could easily get directions at the store. When I came to the store, however, I found it was something like two miles; and, to tell the truth, there was not any store. It had been burned down, and there was no house in the immediate neighborhood. Yes, and it gets dark in Florida *all of a sudden*. They do not have the long twilight we have here in Ohio.

I followed the directions as nearly as I could remember, planning to inquire at the first house. Said house was quite a piece away, especially when the roadway was all through soft yielding sand. Before the darkness came I looked at my list of subscribers, and discovered, for the first time, that the address was printed *Mrs.* instead of *Mr.* J. A. McMillan. Then it occurred to me that my old friend must have died without my having known it.

I was told on inquiry that it was quite a difficult matter to reach the widow's home in the night time; but my informant went quite a piece with me through the sandy woods, got me on the right road, and gave me plain directions to a little place where Charlie McMillan lived, not far from his mother's house. He said Charlie would gladly take charge of me. The directions were that I should pass three unoccupied houses, and then go down to the left through a little lane or by-path, and the first house was the one I wanted. I found the place all right; but as it was quite a distance I had "waded" through the soft sand, I became pretty tired. Then I discovered that no one was at home. I then went on to the next place, quite a fine-looking residence; but after going around to all the doors, and trying them all, I decided that *that* place too was unoccupied. A little further on, another fine residence proved likewise; but away off in the distance, I could not tell just how far, a light twinkled from a fine-looking mansion. The gentleman who went part way with me said Charlie's mother lived not more than twenty rods from his little home. I remembered, too, it was on the shore of a little lake. I said to myself, "If Mrs. McMillan's house is not more than twenty rods from this spot, and on the shore of a lake, I can certainly find it in the course of half an hour." But I explored north, south, east, and west. There was no such establishment in that vicinity. I was getting to be very tired, and finally decided to go for that twinkling light and get information. Before I got near the place, however, struggling through the weeds and bushes, I came to the shores of a little (but not *the*) lake. With weary steps I pushed my way around the borders of the lake, and came to a fine mansion and beautiful grounds, and every thing in city style. I could not find the bell, so I rapped on the door. A woman's voice inside asked what was wanted. I explained the circumstances and asked for directions. She did not think proper to open the door. She said Mrs. McMillan's house was a long way off, and asked what I wanted

of her at such a time of night. I tried to explain matters, told her that I had plenty of money to pay for all time and trouble, and asked if I could not sleep somewhere there till daylight. She said her husband was too unwell to come and give me the information I wanted, but said if I would follow around the lake some of their hired help had a cottage there, and he would give me what information and assistance I desired.

Now, this seemed for the time a little bit hard on a stranger, but the circumstances were much against me. I was disturbing people after the usual hours of repose. I was not coming exactly like a thief in the night, but I was coming very much like a *tramp* in the night. Had I come in the day time, with a carriage, or even a humble equipage, very likely I should have received a most cordial welcome from these good people, who, under the circumstances, seemed quite willing I should sleep outdoors in the sand; and, in fact, I meditated doing so. My bed would have been soft enough, no doubt; but I think I might have had chills before morning. The cottage I was referred to was kept by some colored people. They told me where I could find the residence of Mrs. McMillan. But I got lost again; and out in that deserted wilderness I found another beautiful mansion. Why, it was almost princely in its appointments—fruits, flowers, beautiful walks, curved driveways with curb made of artificial stone, and here and there summer-houses. Tired as I was, it seemed as if I had fallen into a place of enchantment. The moon had come out by this time, and I wondered if the "Arabian Nights" had not broken out away up here in the sandy Florida wastes. I rapped at the door, and a woman's musical voice responded from above. I wondered if she was not some fairy lady who was kept there by "enchantment." She listened to my "tale of woe," and seemed exceedingly kind and sympathetic. She tried to direct me to the place I was seeking; but it was so near midnight, and I had become so "rattled," I really did not know any thing. When she told me that Mrs. McMillan's house was in plain sight of their place in the day time I almost felt like shouting for joy. I did not know north, east, south, or west; but by centering my mind on the matter I *could* decide which was my right and which was my left hand. She told me to go right through the gate where I came in, turn to the right, and just follow the road, and I would reach Mrs. McMillan's in a few minutes. I did so, and received such a cordial welcome that I forgot all my troubles and fatigue. But I made some big resolutions that night, to the effect that you would not catch me again, lost in the Florida woods and sand after dark. A refreshing sleep made me myself again when daylight came. Charlie and his wife, it seems, had left their own home, and were staying with his mother at the time. While we were laughing over the adventures of the night before, I asked Charlie to explain what the storekeeper meant by saying his place was not over twenty rods from his mother's house.

"Well," said he, "because that is about the distance."

"Why, look here, Charlie. Your place—at least the place I went to in the night—is away off in *that* direction, and it is certainly a good big mile from here."

Charlie was contrary, however. He declared he ought to know about the matter, for he had lived several years right near his mother.

After breakfast I said, "Now, Charlie, I want you to go out in the direction you say your place lies, and find it for me within twenty rods of where we are."

Well, Charlie was quite right. Sure enough, right close by, was the little home where I had rapped on the door so persistently, but without effect, the night before. It made me think again of a land of enchantment. Some of our older readers will remember that that is the place where I found a pony that had been tamed and civilized by feeding him bread and honey. Some sad changes had taken place during the years that had passed. My genial friend was gone to the great unknown beyond. The bees did not prosper as they did years before; and, in fact, the frost had ruined things generally in that neighborhood. The deserted homes where I could not find anybody to wake up the night before were one of the results of that memorable freeze.

That day Charlie very kindly took his horse and buggy and carried me around among the celery-growers. On page 252, March 15, you will find an account of our visit. Now, here is the wonderfully strange and inconsistent thing that astonished me all over Florida. This great discovery in the way of growing celery is right in the very neighborhood of these deserted plantations; and notwithstanding the enormous profits experts are making with the favorable soil and artesian water, land may be bought for almost a song all around in that locality.

There is another strange thing about Florida. There are vacant houses and deserted farms here in Ohio; but usually, before they are vacated, the place has run down and looks forbidding. In Florida the places will have every evidence of being occupied and cared for; but investigation shows the owner has all at once dropped every thing and gone. There is going to be a change in Florida, no doubt—in fact, great changes have been made already in many of these deserted places. When people learn how to avoid the disastrous results of the sudden changes in temperature, then things will be started on a firmer basis.



THE APPLE-TREE BORER; HOW TO CIRCUMVENT IT; ALSO SOMETHING ABOUT THE TRAP LANTERN.

The inventor, or one of the inventors, of the trap lantern, sends us the following:

THE APPLE-TREE BORER.

There are two species of apple-tree borers—one known as the flat head, that bores into the body of the tree; the other the round-headed borer that enters the tree near the surface of the ground.

In over 2000 acres of apple orchards we have had no trouble with body borers for many years. I learned how to eliminate the body-borer in the summer of 1874. My father, the late Hon. Ira S. Haseltine, planted a pioneer orchard of 90 acres, consisting of more than 100 varieties of apples, and a large number of varieties of pears and peaches. While working in this orchard I discovered that the body-borers were in the trees that had been sun-scalded or injured on the south and southwest side. I therefore bent limbs and twisted suckers so as to shade the trunk or body of the tree. These trees had all been headed high in the nursery. We notified the nurserymen who expected to supply us with future nursery stock to head their trees low, and raised nursery stock ourselves for additional orchards, and headed or limbed the trees near the ground, for three reasons: 1. To prevent the body-borer from entering the tree; 2. To prevent the winds from tipping the tree so easily; 3. To make apples one-half cheaper to gather. In planting these trees we leaned some of them a little to the southwest to protect the body until the head or top was sufficiently large to shade it thoroughly, and also from the fact that our prevailing winds are from the southwest, and would otherwise lean the tree in the opposite direction. In this way we have entirely eliminated the body-borer and made strong, vigorous, healthy trees.

The root or round-headed borer was not so easily dealt with. It is the most destructive orchard-pest, as it girdles the tree and kills the orchard if not removed. Until I invented my moth-catcher we used a jack-knife and wire to extract them, as the only sure means to protect the trees. Many washes have been recommended, some tried. But until we discovered that we could catch the beetles, as the Department of Agriculture at Washington, D. C., in their bulletin No. 32, July 1, 1898, page 7, says: "They are attracted to a light at night to some extent, and some meet their end in this way," we had still to use the jack-knife and wire to get out the old stock of worms, as the larva of the beetle stays in the tree about three years, and we did not discover how to catch the striped parent beetle or bug until last year. This borer-beetle lays eggs in the month of June, and later. Therefore, now is the time to catch it.

S. A. HASELTINE.

The suggestions in regard to leaning fruit-trees to the southwest as a remedy for borers are all right. I have followed almost exactly the plan outlined for years. Trees that are allowed to be tipped over toward the northeast by the prevailing winds are almost sure to have sun-scald, and, later on, borers. I find young basswood-trees very susceptible to sun-scald, if they are allowed to tip over so the sun strikes directly on their bodies, almost at right angles, in the middle of the afternoon. Pull them over by some efficient means so that the foliage of the tree will shade the trunk till the sun is nearly down, and they will recover all right. The suggestion about the moth-catcher referred to in the last part of the article, I am not so sure of. Just now, however, Mr. Haseltine sends me the following from Prof. Stedman:

I can recommend the Haseltine moth-catcher to gardeners, farmers, and horticulturists for catching the following injurious insects: The moths of the striped worm in corn, cotton, and tomatoes (corn or boll worm); June or May beetle, adults of the white grubs; tent caterpillar moths; pickle-worm moth in cucurbit; army-worm moth; cut-worm moth; fruit-leaf roller-moth, adult of the worm that eats apple, pear, peach, plum, cherry, quince.

J. M. STEDMAN, Entomologist.

Experimental Sta., Columbia, Mo., June 18, 1901.

Now, I must confess I am not enough of an entomologist to decide whether the above list includes the beetle that produces the borers

or not. No doubt the trap-lantern will catch some of these enemies of the fruit-grower; but the testimony from several experiment stations seems very strong to the effect that it is not going to accomplish by any means all that the vendors claim for it in their circulars. It is always in order to get the borer out of your trees just as soon as you discover they are at work. But the question of keeping them away by means of trap-lanterns placed at intervals through the orchard is one yet to be settled. I would ask our readers to take notice that Prof. Steadman does not anywhere, in the above, mention the codling-moth; yet the circular that Mr. Haseltine sends out claims in the very first sentence that it destroys the codling-moth; and in some of their advertisements they have declared it would render spraying unnecessary*. I should say this latter claim is pretty nearly preposterous. We shall be glad, however, if the device will do only a part of what they claim for it.

Special Notices by A. I. Root.

AN ILLUSTRATED WEEKLY PAPER FOR YOUNG PEOPLE, WHICH WE CAN HEARTILY RECOMMEND.

In our June 15th issue I said our people had been making exceedingly liberal offers to club GLEANINGS with other periodicals, and that some of these periodicals that had been "pushed" quite vehemently I did not particularly indorse. Well, a few weeks ago I picked up a Sunday-school paper belonging to some of the grandchildren. The articles were of such merit, so full of instruction in business and other matters in life, I was agreeably surprised. When I mentioned the name of the paper to the other members of our firm I found each one of them had been reading the *Wellspring* (for that is its name), and all were equally delighted with its high moral tone as well as its beautiful pictures and exceedingly interesting articles; and when I said, "Boys, here is something really worthy of encouragement. Now, even if it is not offered at so low a price as some other periodicals, let us give it such a recommend as it deserves, and try to introduce it into homes where GLEANINGS goes," they all assented. I wrote the publishers, and they made me a better offer than I had any right to expect. This paper, so interesting that even I take time to read it, comes weekly, is beautifully illustrated and yet we are going to club it with GLEANINGS for only \$1.25. The regular price of the little paper is 75 cts. a year. You can have a sample copy free on application. The publishers do not say so, but I do, just write me on a postal, "Send a sample copy of the *Wellspring*," and I will see that you get it. Then if you want it a whole year, it will be only 25 cts. more than you pay for GLEANINGS—that is, if you ask for no other premium.

THE NEW CRAIG POTATO.

We say now just as we said a year ago, that the New Craig is the best cooking potato we have in our whole assortment at this season of the year. A dish of them that we had on the table this morning looked so handsome and flouncy, rolling open almost like a dish of popcorn, I felt like having it photographed. Now, I confess this is one of my happy surprises. We have

* Here are some more statements I find in the Haseltine circular in regard to the moth-catcher:

By spraying, many head of stock were killed, several of them thoroughbreds. . . . Trees that have been sprayed the most, show signs of decay, and may die. Spraying apples may cause an early decay.

In regard to stock being killed by spraying fruit-trees, I have never been able to find such a case; and some of our best agricultural journals say the same. In regard to injuring trees by spraying, this is the first time I ever saw such a suggestion, and I know of orchards that have been sprayed thoroughly almost ever since spraying was introduced.

had the New Craig for seven years. It is the best yielder we have ever gotten hold of—almost as handsome in shape as Carman No. 3—a rank strong grower that is seldom troubled with either bugs or blight on our ground. Besides this it is one of the best keepers, if not the very best one, we know of. It is very slow to sprout in the spring. The potatoes keep hard and firm, with very little care, clear on into June; and during the whole spring months it is our very best table potato, not even excepting the Freeman and Snowflake. On our own grounds, and in our own cellar, it has no drawback whatever. It stands at the head of late potatoes. With us, it has no fault; but, to tell the truth, it does not seem to succeed in some localities as well as it does here in Medina. Not only on our own grounds, but our neighbors all around us succeed with the Craig just as I have told you above; but when we send it away, a good many complain of it. Why, our own Ohio Experiment Station reported one year that they thought it was especially subject to blight, when *with us* it is the nearest to being blight-proof of any thing on our grounds.

Oh yes! there is one other thing. Prof. Chamberlain, of Hudson, O., objected to it on the ground of its being a *red* potato. Well, we have some good news right here. Last season we planted New Craigs entirely on a piece of ground along the railroad. We did not manure and underdrain it, as the land is not ours; but we got a splendid crop of New Craigs, nevertheless. Why, it was one of the biggest of my happy surprises. And then there was another happy surprise on top of it all. The boys found about a bushel and a half of *white* Craigs in one spot of ground where it was rather more sandy and gravelly than the rest of the lot. I do not know what in the world should have made them white, but white, almost entirely, they were, and rounder and smoother than any Craigs I ever saw before. Every one of our readers who grows potatoes ought to try the New Craig. If it succeeds on your ground as it does with us, it ought to be worth a pile of money to you.

Just one thing *more* in their favor, and it is a big point too. Unless you plant them quite close, many of the potatoes will be too large to suit the women-folks. With close planting the vines will very quickly cover the entire ground, choking out weeds of every kind. We have them every year so I can stretch single vines higher than my head. Well, when the ground is covered with such a heavy mat of potato-vines there is no more cultivating to do, and no trouble with weeds, and very seldom any trouble with bugs.

I know this is saving a great deal about just one potato; but year after year keeps telling the same story in our locality, and I think the world at large ought to give this splendid potato more attention.

Now, this story is not told as a preface to get you to buy some Craigs, for every one of them is planted. I would advise you, however, to law in at least a few in the fall, when we come to dig them. For a big crop you will need to plant them early, for they will keep green and growing clear on till frost, no matter when you put them in the ground.

New York State Apiarian Exhibit at the Pan-American.

Nearly all the honey in the New York apiarian exhibit is to be replaced by honey of this year's production as soon as the latter can be obtained from the bee-keepers of this State. A goodly number of New York bee-keepers are now represented, but it is desirable that many more participate. Let all bee-keepers of this State who are so fortunate as to be favored with fine honey, both comb and extracted, correspond with the superintendent of the New York apiarian exhibit with a view of sending in an exhibit. There will be absolutely no expense to the exhibitor, further than the extra pains he takes to produce fine exhibition honey, and in the extra care taken to ship the same in a manner to minimize danger of breakage.

OREL L. HERSHISER, Superintendent.

GLEANINGS AS AN ADVERTISING MEDIUM.

I desire to express my gratification over the result of the small "ad" the Pere Marquette R. R. is running in GLEANINGS. It has attracted attention and brought forth requests for further information from Oklahoma to Ontario, Can. W. C. TOUSEY.
Toledo, O., May 1.

To Our Shippers.



About May 1st last, we removed our business from the buildings, 120-122 W. Broadway, to larger and more commodious quarters at Nos. 265-267 Greenwich Street, and 82-84-86 Murray Street, and we duly sent to our friends in the trade a notice of our removal. Shortly after we vacated the premises, 120-122 W. Broadway, one Joseph M. McCaul, rented a portion of our old quarters, and hung out a sign, "Hildreth, McCaul Co., Jos. M. McCaul, Prop.," with other large signs to the effect that his business is "Headquarters for honey, beeswax, maple sugar, and maple syrup."

The mercantile agencies report that Joseph M. McCaul is the sole proprietor of the new business, and that he claims to have paid to one Henry P. Hildreth, who has no connection with our business, a consideration for the use of his name.

We will not comment upon the act of leasing our old quarters and exposing thereon the sign, "Hildreth, McCaul Co.," further than to state that we have instructed our attorneys to apply for an injunction restraining the said McCaul from using the name "Hildreth" in connection with his business in any manner whatsoever.

We value highly the good name and business we have established by many years of satisfactory dealing with our friends in the trade, and we therefore send this notice so that you may not possibly confound us in any manner with the so-called "Hildreth, McCaul Co."

Our firm name remains as heretofore, and all our business is carried on at our new quarters, Nos. 265-267 Greenwich St., and Nos. 82-84-86 Murray Street, New York.

Respectfully yours,

HILDRETH & SEGELKEN.